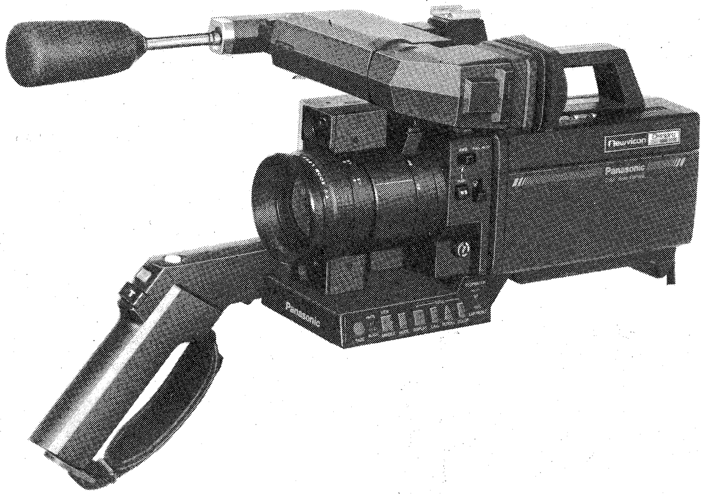
ORDER NO. VRD8505337
B4

Service Manual

Color Video Camera

PK-959
PK-980
PK-959-K
PK-980-K



SPECIFICATIONS

Power Source:	DC 12V ± 10% AC 120V ± 10%, 60Hz ± 0.5% (with Power Supply Unit)
Power Consumption: (with E.V.F.)	DC 6.1W at 12V DC (Battery) (5.7W with Auto Focus off)
Newvicon Tube System:	2/3″ frequency separation single tube system (built in stripe filter)
Single Carrier Frequency:	5MHz (6MHz: PK-980/980-K)
Focus System:	Electro-static type
Lens Mounting:	Built in zoom lens (not "C" mount)
Lens:	8:1 zoom lens with auto/manual iris control (10:1, PK-980/PK-980-K) Auto iris: elosed with power off Auto zoom lens and macro consutruction Auto focus system F: 1.4, f: 11mm ~ 88mm (F: 1.6, f: 11.5mm ~ 115mm: PK-980/PK-980-K) d: 1.0m to infinity
Lens Diameter:	58mm
Light Sensitivity:	Minimum light intensity on optical image: 7 lux (F: 1.4) (10 lux (F: 1.6): PK-980/PK-980-K) Optimum light intensity on optical image: 900 lux

Video Output Level:	1.0Vp-p, 75Ω (Standard NTSC signal)
Sync. System:	Internal Sync.
Signal to Noise Ratio:	More than 45dB
Horizontal Resolution:	300 lines (380 lines: PK-980/PK-980-K)
Color Temperature Control:	2 step switch (indoor/outdoor) & Auto adjust
Microphone:	Stereo microphone
Audio Output Level:	−20dB, Hi-impedance (1kΩ)
External Microphone Input Impedance: (Left, Right)	−70dB, 600Ω unbalanced, M3 connector
Electronic Viewfinder:	Monochrome 1 inch CRT, built-in
Operating Temperature:	5°C to 40°C
Operating Humidity:	10% to 75%
Operating Position:	Normal position and Gain up position
Weight:	Camera Head with E.V.F 5.5 lbs (with lens, 7ft cable & shoulder pad/handle grip)
Dimensions:	Camera Head with E.V.F. 8.4″(W) × 7.6″(H) × 16.1″(D) 212mm(W) × 192mm(H) × 409mm(D) (PK-959/PK-959-K) 8.4″(W) × 7.6″(H) × 17.6″(D) 213mm(W) × 192mm(H) × 446mm(D) (PK-980/PK-980-K)

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

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INTRODUCTION

This Service Manual contains information which will allow the service technician to understand and service the Panasonic Color Video Camera Models PK-959, PK-980, PK-959-K, PK-980-K and the various accessories that complement the Camera.

For a detailed technical explanation, please refer to the Training Manual on these models. Some of the features incorporated in these models are: Auto Focus, Auto Iris, 8 : 1 Power Zoom Lens (10 : 1, PK-980/PK-980-K), Fade Button, Backlight Button, White Balance Switch, Negative-Positive Reverse Switch, Date & Timer Display and it is light weight and very compact.

These features in addition to the basic Color Camera make the PK-959, PK-980, PK-959-K, PK-980-K an ideal unit for your education, recreation and entertainment.

Just slightly ahead of our time...Panasonic.

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GENERAL SAFETY PRECAUTIONS

PRODUCT COMPLIES WITH DHHS PULES 21CFR SUBCHARTER
J APPLICABLE AT DATE OF MANUFACTURE
SAFETY PRECAUTION

GENERAL GUIDELINES

1. When service is required, observe the original lead dress. Components, wires or cables that indicate evidence of overheating or other electrical or mechanical damage should be replaced.
2. After servicing the camera, power supply and electronic viewfinder, all the protective devices, such as insulation tape, shields and isolation R-C combinations must be properly installed.
3. Potentials as high as 5KV are present when the electronic viewfinder is operating. Operation without the camera head side covers, finder case ass'ys of electronic viewfinder and covers of power supply unit presents a danger of shock hazard from the camera power supply.
   Servicing should not be attempted by anyone who is not thoroughly familiar with the precautions that should be taken when working on high-voltage equipment. Always discharge the anode of the picture tube to the main chassis before handling the tube.
4. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

LEAKAGE CURRENT COLD CHECK

Conduct this test on the power supply unit with the camera disconnected and repeat with the camera power supply unit and electronic viewfinder properly assembled. Also, repeat test with and without available approved accessories/cables/connectors.

1. Turn the AC switch on.
2. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed terminal, screwheads and coaxial connector.
   The resistance measured should not be less than ∞ (infinity).
   Any resistance value below this range indicates an abnormality which requires corrective action.
3. Repeat the test with the AC switch in the "off" position.

LEAKAGE CURRENT HOT CHECK

Conduct this test on the power supply unit with the camera disconnected and repeat with the camera, power supply unit and electronic viewfinder properly assembled. Also, repeat test with and without available approved accessories/cables/connectors.

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a 1.5KΩ 10 watt resistor, paralleled by 0.15μF capacitor, between each exposed metallic part on the unit and a good earth ground such as a water pipe, as shown in figure 1.
3. Use an AC voltmeter, with 1000Ω/volt or more sensitivity, to measure the potential across the resistor.
4. Check all exposed metallic parts of the cover (Cable connection, Handle bracket, metallic cabinet, Screwheads, Metallic overlays, etc), and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 V RMS.

A leakage current tester (FLUKE MODEL: 8000A equivalent) may be used to make the hot checks. Leakage current must not exceed 0.5 milliamp.

In case a measurement is out side of the limits specified, there is a possibility of a shock hazard, and corrective action must be taken before returning the instrument to the customer.

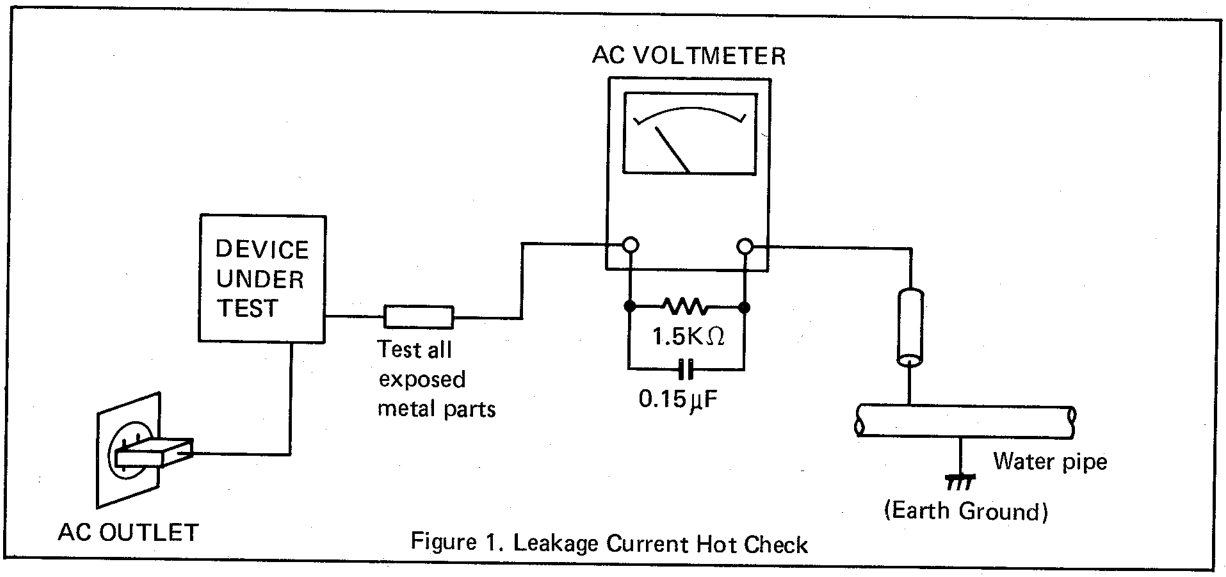


Figure 1. Leakage Current Hot Check

X-RADIATION

WARNING:

1. The potential source of X-Radiation in E.V.F. sets is the High Voltage section and the picture tube.
2. When using a picture tube test jig for service, make sure that the jig is capable of handling 10.0 kV without causing X-Radiation.
3. It is important to use accurate, periodically calibrated high voltage meter.
4. Measure the High Voltage. The upper meter(electrostatic type) reading should indicate 2.7 kV ± 0.2 kV. If the upper meter indication is out of tolerance, immediate service and correction is required to prevent the possibility of premature component failure.

To prevent an X-Radiation possibility, it is essential to use the specified picture tube.

ELECTROSTATICALLY SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed for potential shock reasons prior to applying power to the unit under test.

2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.

3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.

4. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ES devices.

5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.

6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).

7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.
   CAUTION: Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device).

IMPORTANT PRECAUTIONS

LOCATION & USE

Storage of your Camera

Store and handle your camera in a manner that will not subject it to unnecessary movement (avoid shaking and striking). The camera contains a sensitive pick-up tube which could be damaged by improper handling or storage. The camera should not be stored under conditions where temperatures are over 149°F (65°C).

Avoid extreme environments

Do not use the camera when high or low temperature or high humidity exist.
Proper performance of the camera is not obtained in extreme temperature environments.

Do not leave the camera in direct sunlight.

When the viewfinder eyepiece is exposed to direct sunlight it works as a magnifying glass. The concentrated sunlight can cause damage to internal parts of the camera.

Do not aim the camera at the sun or other bright objects.

This action could permanently damage the pick-up tube whether the camera is turned on or off.

Do not leave the camera or the power supply turned on when not in use.

Do not block the ventilation slots

The ventilation slots prevent abnormal increases of internal temperature.

To avoid shock hazard

Do not attempt to disassembly this unit. There are no serviceable parts inside.
The camera and power supply should be operated on power line voltages of 120V AC at 60Hz.
The camera and power supply should not be exposed to rain or moisture.
Do not operate the camera or power supply if it becomes wet.
Unplug the camera from the power supply before cleaning.

CARE

To clean your camera

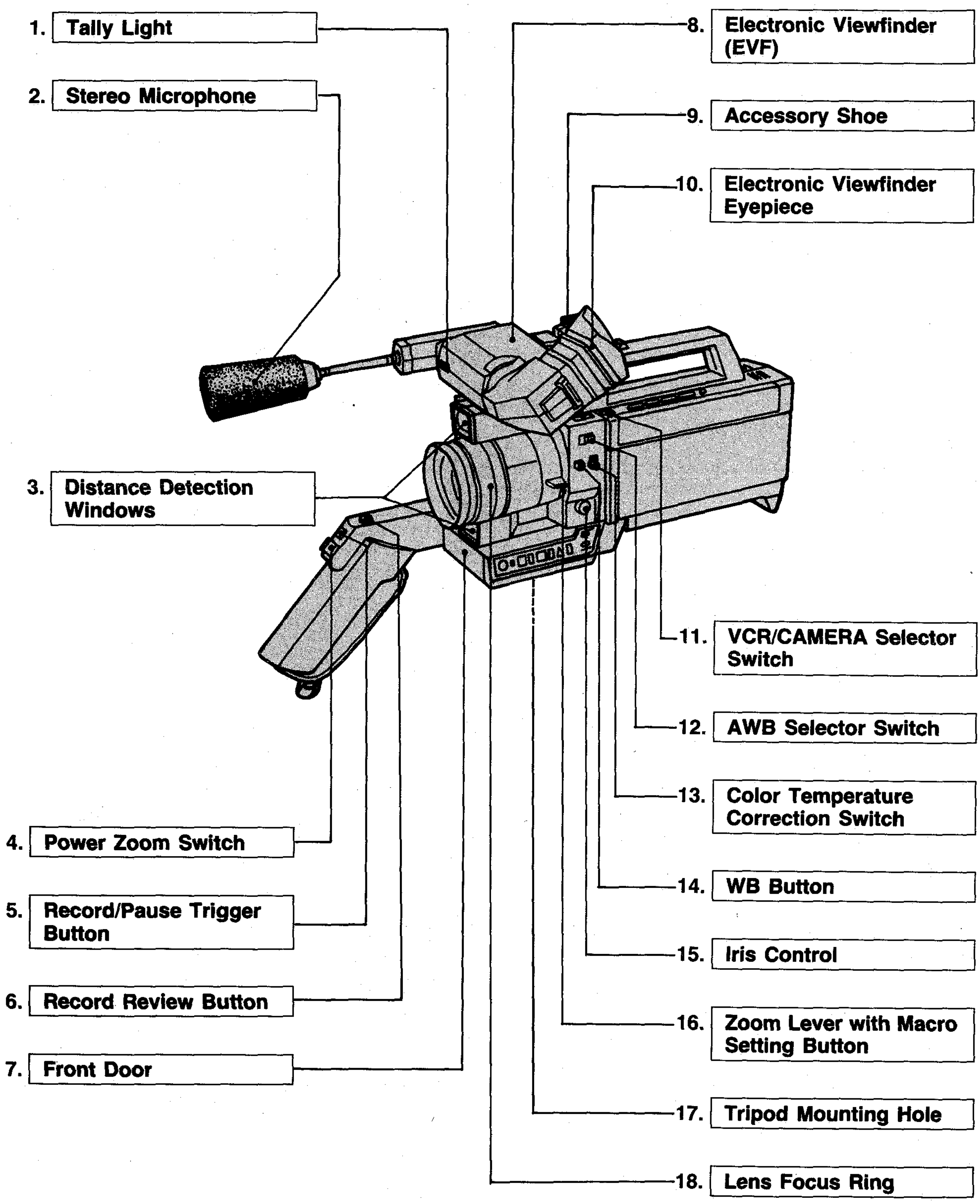
Do not use strong or abrasive detergents when cleaning the camera body.

To protect the lens

Always replace the lens cap on the camera lens when the camera is not in use.
Do not touch the surface of the lens with your hand.
Use a commercial camera lens solution and paper when cleaning the lens. Improper cleaning can scratch the lens coating.

⚠ The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure; that may be of sufficient magnitude to constitute a risk of electric shock to persons.	**CAUTION** RISK OF ELECTRIC SHOCK DO NOT OPEN **CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**	⚠ The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

CAMERA FEATURES AND CONTROLS


1. Tally Light
2. Stereo Microphone
3. Distance Detection Windows
4. Power Zoom Switch
5. Record/Pause Trigger Button
6. Record Review Button
7. Front Door
8. Electronic Viewfinder (EVF)
9. Accessory Shoe
10. Electronic Viewfinder Eyepiece
11. VCR/CAMERA Selector Switch
12. AWB Selector Switch
13. Color Temperature Correction Switch
14. WB Button
15. Iris Control
16. Zoom Lever with Macro Setting Button
17. Tripod Mounting Hole
18. Lens Focus Ring

1. **Tally Light**
   The tally light (red) flashes so the person in front of the camera will know that recording is in progress.

2. **Stereo Microphone**
   Records stereo sound while the picture is being recorded. This stereo microphone can be extended by approx. 2 inches.

3. **Distance Detection Windows**
   These two windows are used by the automatic focus feature.

4. **Power Zoom Switch**
   This switch allows you to “Zoom-in” (Telephoto or T position) or “Zoom-out” (Wide Angle or W position). Two zoom speeds are available; normal speed zoom by lightly pressing the button and faster speed zoom by pressing fully.

5. **VCR Record/Pause Trigger Button**
   To start and pause recording.

6. **Record Review Button**
   To monitor the last few seconds of recorded material on the viewfinder. The VCR must be in the Record/Pause mode prior for this feature to operate.
   This feature works with Panasonic VCRs PV-6000/PV-8000/PV-9000/PV-9000A.

7. **Front Door**
   For access to the Video Input Jack and Video Output Jack.

8. **Electronic Viewfinder (EVF)**
   This is a small TV monitor that shows the actual picture the lens sees but in black and white.

9. **Accessory Shoe**
   The Accessory Shoe can be used for mounting accessories on the camera.

10. **Electronic Viewfinder Eyepiece**
    This eyepiece can be turned to the side to see the viewfinder from a distance.

11. **VCR/CAMERA Selector Switch**
    Set this switch to VCR to use the Camera Remote Control Buttons.
    For camera recording, set to CAMERA.

12. **Automatic White Balance (AWB) Selector Switch**
    For automatic adjustment of white balance set this switch to FULL AUTO. For finer adjustment, set to the PUSH position.

13. **Color Temperature Correction Switch**
    To select the proper color filter for indoor or outdoor usage.
    💡 .... for indoor use,
    ☼ .... for outdoor use

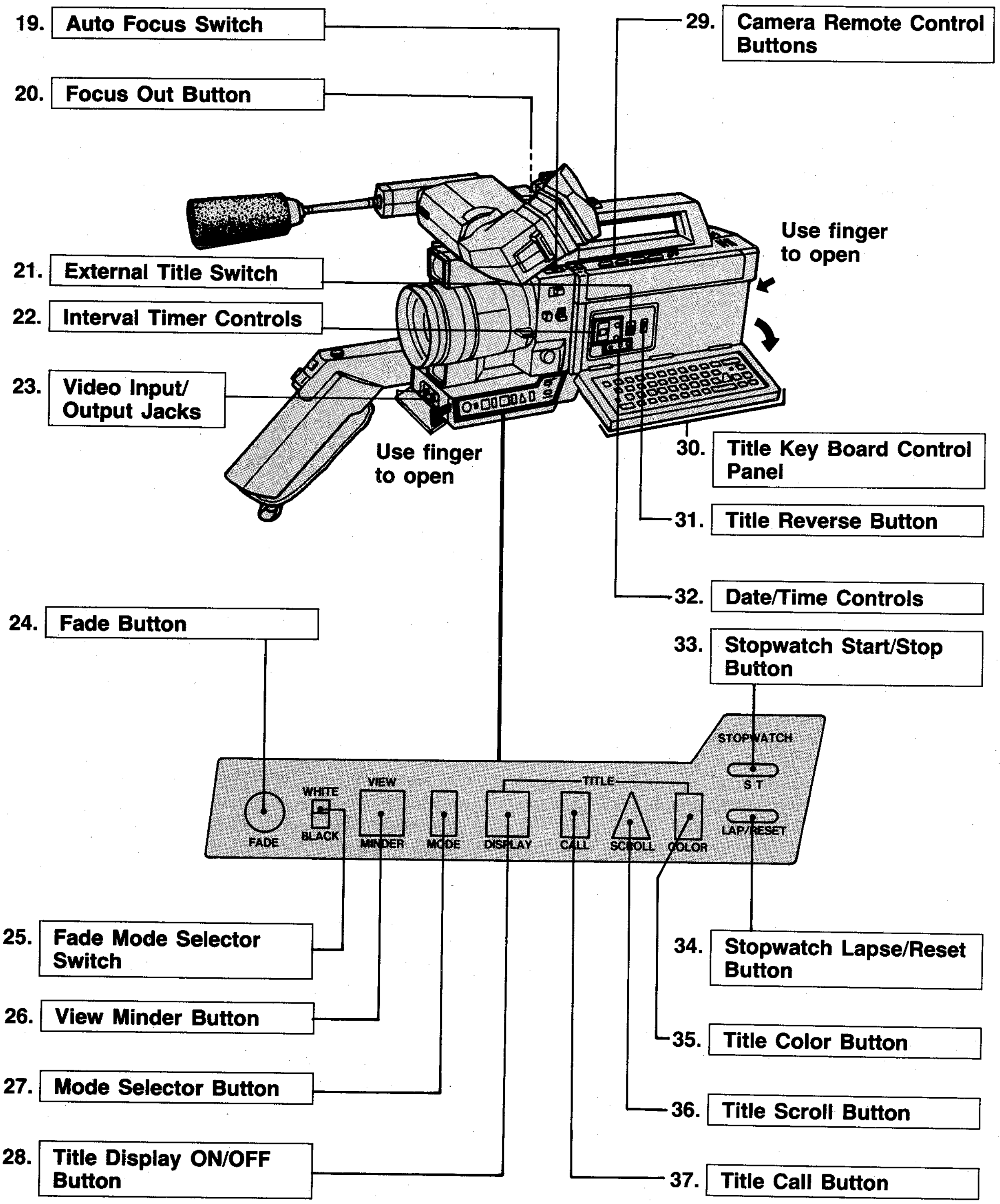
14. **White Balance (WB) Button**
    For fine adjustment of white balance, push this button until the View minder display shows “OK”.

15. **Iris Control**
    To select the lens iris control to MANUAL or AUTO operation. Push in for automatic lens iris adjustment. Pull out and turn for manual lens iris adjustment.

16. **Zoom Lever with Macro Setting Button**
    Use this lever to rotate the zoom ring for manually zooming. Use button to set the camera to the Macro position for Close-up photography.

17. **Tripod Mounting Hole**
    Used for mounting the camera on a tripod with a standard 1/4"-20 thread.

18. **Lens Focus Ring**
    Rotate to manually focus the picture.


19. Auto Focus Switch
20. Focus Out Button
21. External Title Switch
22. Interval Timer Controls
23. Video Input/ Output Jacks
24. Fade Button
25. Fade Mode Selector Switch
26. View Minder Button
27. Mode Selector Button
28. Title Display ON/OFF Button
29. Camera Remote Control Buttons
30. Title Key Board Control Panel
31. Title Reverse Button
32. Date/Time Controls
33. Stopwatch Start/Stop Button
34. Stopwatch Lapse/Reset Button
35. Title Color Button
36. Title Scroll Button
37. Title Call Button
Use finger to open
Use finger to open
STOPWATCH
S T
LAP/RESET
FADE
WHITE
BLACK
VIEW
MINDER
MODE
TITLE
DISPLAY
CALL
SCROLL
COLOR

19. **Auto Focus Switch**
In the MANUAL position, push and hold this switch down for auto focusing. Push and slide this switch to the AUTO position to lock it in automatic focus mode.

20. **Focus Out Button**
When the Auto Focus switch is in the AUTO position, press this button to bring picture out of focus. Release button and picture comes into focus automatically. This effect increases when the camera is zoomed-in.

21. **External Title Switch**
Used when inserting an external title on your recording.

22. **Interval Timer Controls**
To set Time Lapse recording times.

23. **Video Input/Output Jacks**
To insert a title into previously recorded tapes.

24. **Fade Button**
To fade the picture in or out during recording.

25. **Fade Mode Selector Switch**
This can be set for fades to and from either black or white and has BLACK and WHITE positions.

26. **View Minder Button**
Press this button and the camera setting conditions will appear in the viewfinder.

27. **Mode Selector Button**
To display the Date & Time, Stopwatch and Tape Counter on the viewfinder.

28. **Title Display ON/OFF Button**
To turn the title display function on and off.

29. **Camera Remote Control Buttons**
When the VCR/Camera switch is set to VCR you may use the remote control buttons to control VCR functions. (These functions are not operable with some VCR's). The playback picture can be viewed in the electronic viewfinder.

30. **Title Key Board Control Panel**
To compose and insert titles onto a recording use this key board.

31. **Title Reverse Button**
When this button is pressed, the title and background color are reversed.

32. **Date/Time Controls**
These controls are used to set the Date/Time display.

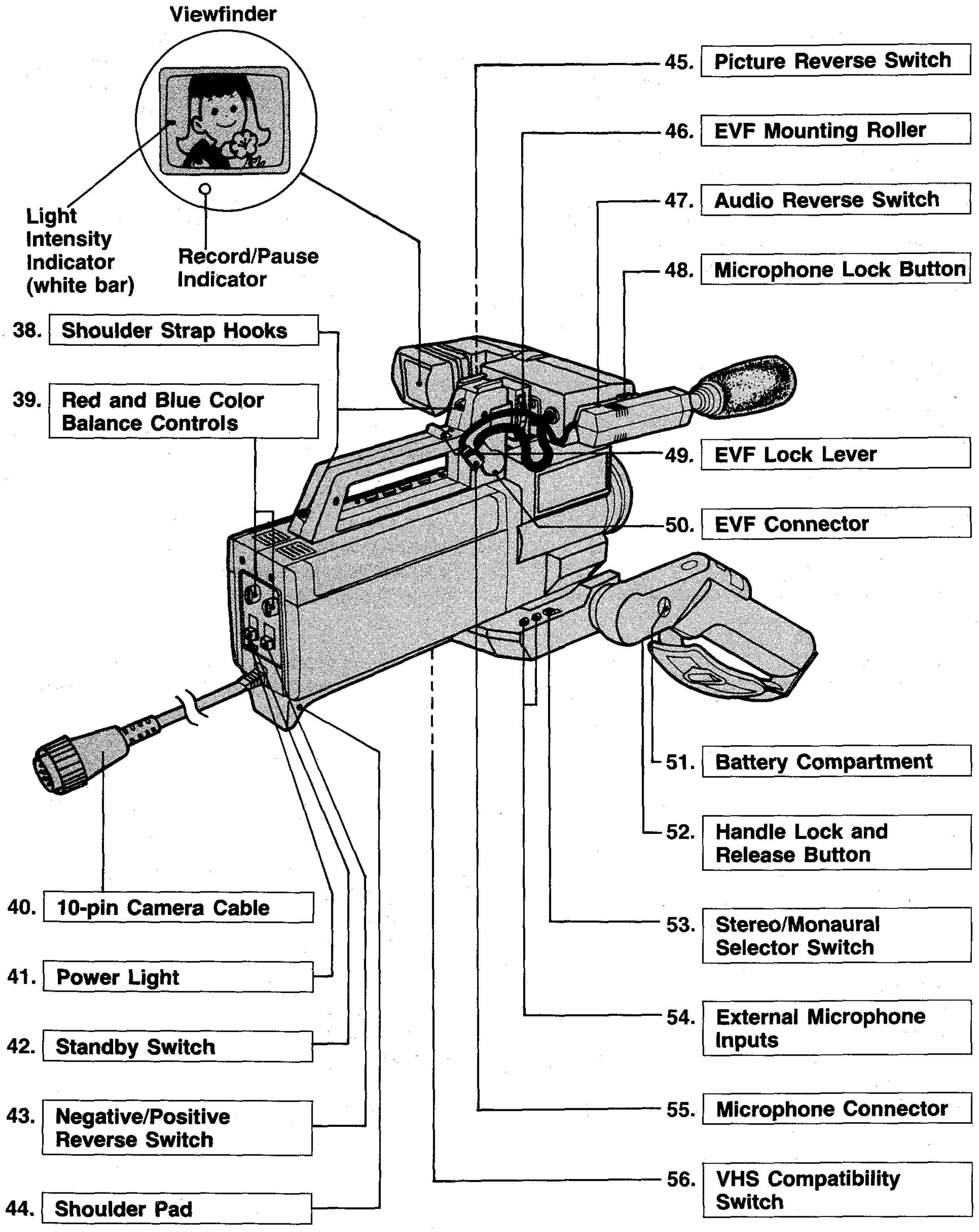
33. **Stopwatch Start/Stop Button**
To start or stop the stopwatch when in the stopwatch display mode.

34. **Stopwatch Lapse/Reset Button**
To view the lapse time or to reset the stopwatch when in the stopwatch display mode.

35. **Title Color Button**
To select title color (White, Yellow, Cyan, Green, Magenta, Red or Blue).

36. **Title Scroll Button**
By Pressing this button the title is moved up and next title page appears in a scroll like motion.

37. **Title Call Button**
This button is used to recall the titles you have composed.


Viewfinder
Light Intensity Indicator (white bar)
Record/Pause Indicator
38. Shoulder Strap Hooks
39. Red and Blue Color Balance Controls
40. 10-pin Camera Cable
41. Power Light
42. Standby Switch
43. Negative/Positive Reverse Switch
44. Shoulder Pad
45. Picture Reverse Switch
46. EVF Mounting Roller
47. Audio Reverse Switch
48. Microphone Lock Button
49. EVF Lock Lever
50. EVF Connector
51. Battery Compartment
52. Handle Lock and Release Button
53. Stereo/Monaural Selector Switch
54. External Microphone Inputs
55. Microphone Connector
56. VHS Compatibility Switch

38. **Shoulder Strap Hooks**
Attach a shoulder strap to these hooks.

39. **Red and Blue Color Balance Controls**
These controls have been preset in the center (detent) position. This setting will usually provide accurate color reproduction.

40. **10-pin Camera Cable**
This cable connects to the CAMERA input jack on the portable VCR.

41. **Power Light**
This light is lit or flashing when the camera power is ON.

42. **Standby Switch**
To save battery power during long pauses between recording, set this switch to STANDBY. Set to OPERATE for recording and GAIN-UP for low light conditions.

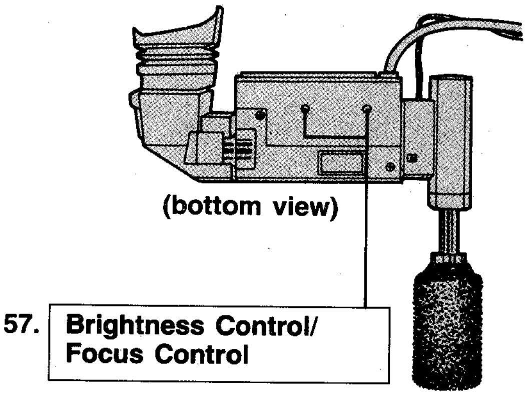
43. **Negative/Positive Reverse Switch**
To reverse the picture color.

44. **Shoulder Pad**
The shoulder pad can be adjusted to the most comfortable position.

45. **Picture Reverse Switch**
To invert the picture on the Electronic Viewfinder.

46. **EVF Mounting Roller**
This roller tightens the EVF to hold it firmly to the EVF mount.

47. **Audio Reverse Switch**
To invert the stereo audio channels.



48. **Microphone Lock Button**
To detach the stereo microphone, press this button down and slide the microphone forward.

49. **EVF Lock Lever**
Release the lock to rotate the Electronic Viewfinder for compact storage.

50. **EVF Connector**
Receptacle for the Electronic Viewfinder connector.

51. **Battery Compartment**
Insert the two batteries into this holder. The batteries must be inserted in order for the date, time and title to be kept in memory.

52. **Handle Lock and Release Button**
Release the lock to rotate the handle grip (five positions are available).

53. **Stereo/Monaural Selector Switch**
Set to the STEREO position for stereo recording. Set to the MONAURAL position for non-stereo recording.

54. **External Microphone Inputs**
You may connect an external microphone to permit audio pickup closer to the subject.

55. **Microphone Connector**
Receptacle for the stereo microphone plug.

56. **VHS Compatibility Switch**
Permits use of this camera with most other VHS portable recorders. If, when using the VCR, the Record/Pause switch on the camera operates in the reverse manner, place the camera in the Standby position and change the position of the compatibility switch.

57. **Brightness Control/Focus Control**
These controls adjust the brightness and focus of the viewfinder picture.
Note: These controls have been set at the factory. It is not necessary to adjust these controls under normal circumstances. But, should it become necessary it is recommended that you use a plastic screwdriver and make the adjustment with caution so as not to damage the miniature controls.

SECTION 2

Electrical Adjustment Procedures

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IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are shaded on the schematic diagram and on the replacement parts list. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.

Service Caution

1. Please disassembly straight the P.C.Boards to protect the conductors of connectors on P.C.Boards.
2. The Extention Cables (Part No. VFKW0026) are available for easily checking the P.C.Boards when disassembly them.

2. DETAILED DISASSEMBLY

2-1. Removal of E.V.F unit.
Turn the E.V.F knob, then, pull out the E.V.F cord and remove the E.V.F unit.

Note: "Left side (Process C.B.A)" and "Right side Microprocessor C.B.A)" disignations refer to the left and right sides of camera when viewed from the front (lens end).

2-2. Removal of Left Side Cover
a. Unscrew a screw (rear side) and move the left side cover to the rear.
b. Then, remove the left side cover.

2-3. Removal of Right Side Cover
a. Move the shoulder side to the rear. Then, press the (A) portion and move the shoulder side to the rear as shown in Fig. D1-A, Unscrew 2 screws (B). (See Fig. D1-B)

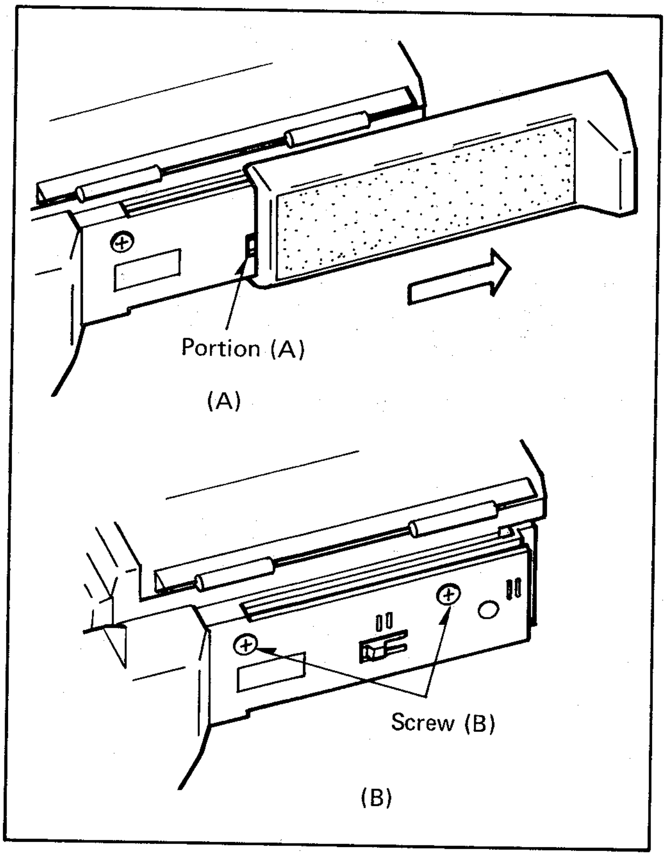


Fig. D1

b. Unscrew a screw (rear side) and move the right side cover to the rear.
c. Remove the right side cover.
d. Disconnect the flexible wire and a connector (P701).

2-4. Removal of Microprocessor Circuit Board
a. Remove the switch case.
b. Disconnect a flexible wire(B601).
c. Unscrew 3 screws securing the circuit board to the chassis.

2-5. Removal of Process Circuit Board
Unscrew 2 screws securing the circuit board to the chassis.

3. REPLACEMENT OF THE PICK-UP TUBE

3-1. Remove the both side covers and disassembly the process circuit and microprocessor circuit boards (refer to section "Disasembly Method").

3-2. Remove the D.Y.Barrier Ass'y from the pre-amp shield cover.

3-3. Unscrew 2 screws (C) and remove the D.Y.band.

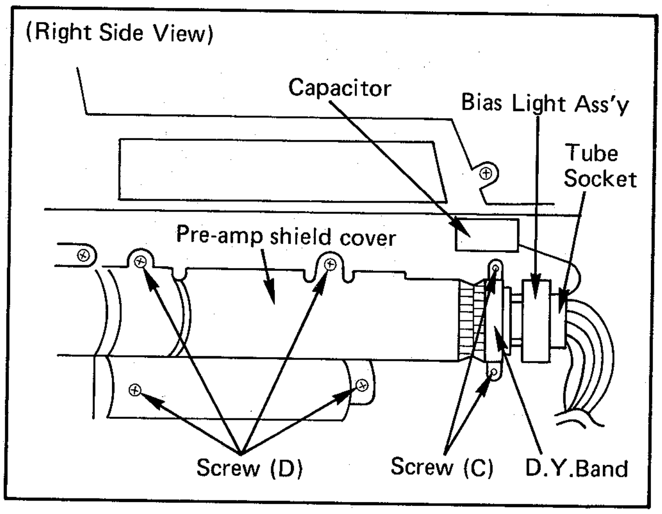


Fig. R1

3-4. Unscrew 4 screws (D) and unsolder a capacitor on the pre-amp shield cover.

3-5. Remove the pre-amp shield cover.

3-6. Remove a white lead from the pre-amp circuit boad. (see Fig. R2)

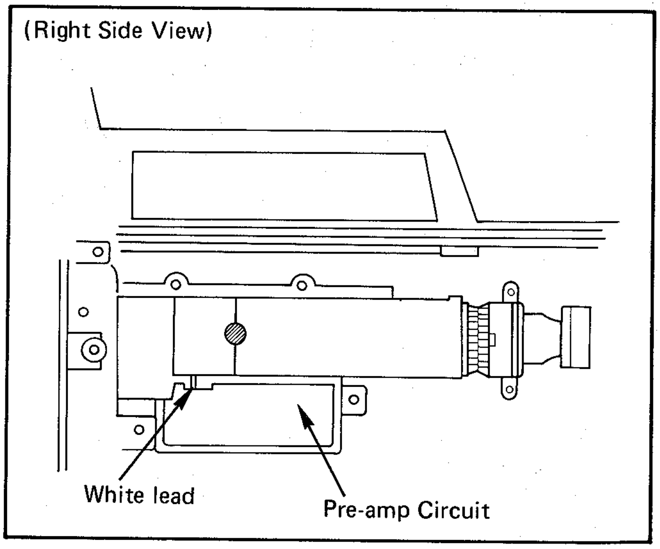


Fig. R2

3-7. Remove the back cover assembly (rear side).

3-8. Unscrew 2 screws (E) and remove the rear side circuit boad (see Fig. R3).

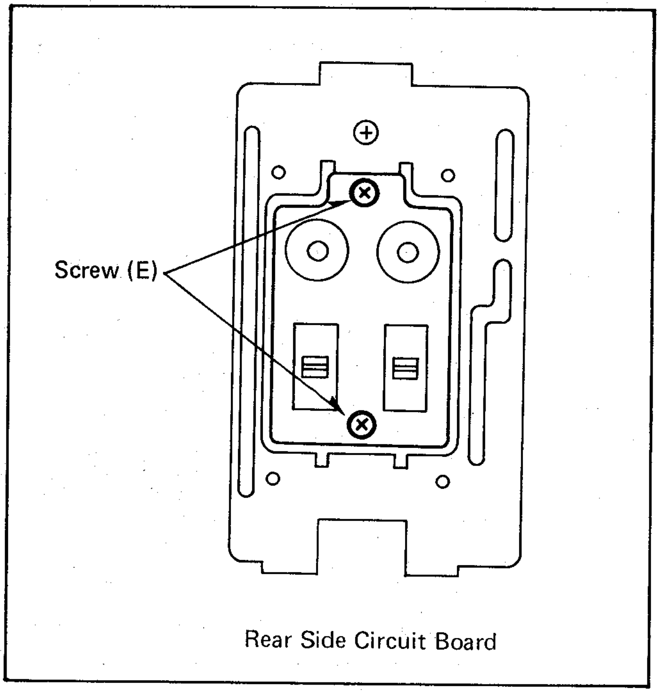

Screw (E)
Rear Side Circuit Board

Fig. R3

3-9. Remove the pick-up tube socket and the bias light holder from the pick-up tube.

3-10. Disconnect a connector (P602) and remove the pick-up tube D.Y.assembly with the filter assembly.

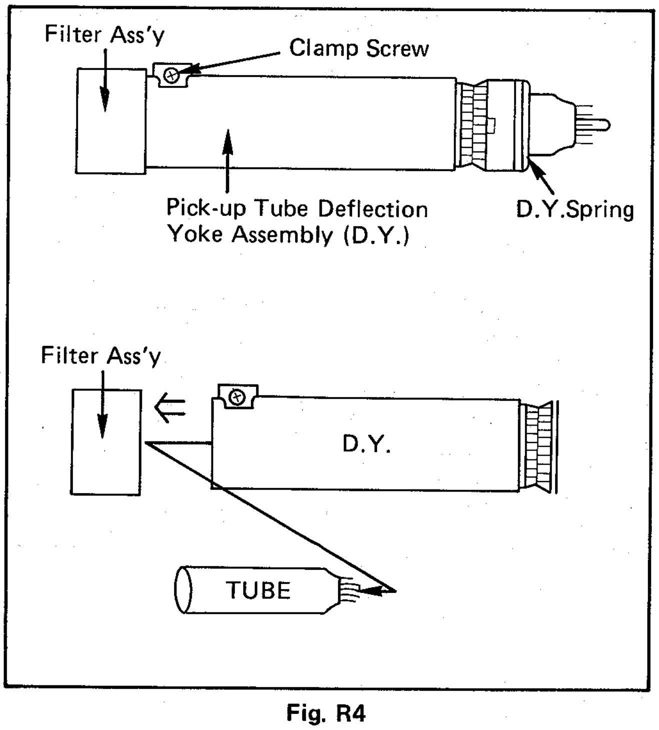

Filter Ass'y
Clamp Screw
Pick-up Tube Deflection Yoke Assembly (D.Y.)
D.Y.Spring
Filter Ass'y
D.Y.
TUBE

Fig. R4

3-11. Remove the filter assembly and the D.Y.spring from the pick-up tube D.Y.assembly (Fig. R4).

3-12. Loosen the clamp screw and remove the pick-up tube from the deflection yoke assembly (D.Y.) (Fig. R4).

3-13. Install the new pick-up tube (S4165) in the deflection yoke assembly.

3-14. Line up the plastic tab on the D.Y assembly with the silver line on the face of the pick-up tube as shown in Fig. R5.

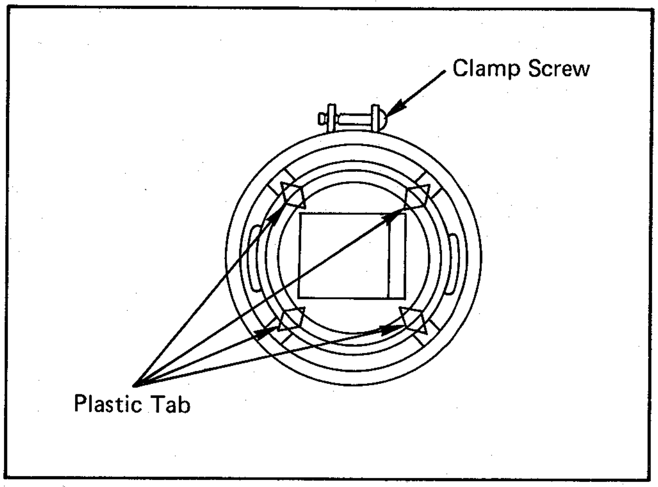

Clamp Screw
Plastic Tab

Fig. R5

3-15. Push the pick-up tube in the D.Y assembly as far as it will go...
using a lens cleaning tissue paper to keep the face plate spotless.

3-16. Reverse the previous steps.

4. REPLACEMENT OF THE POWER ZOOM LENS

4-1. Remove the both side covers, open the process circuit and the microprocessor circuit boards (refer to section "Disassembly Method").

4-2. Unscrew 2 screws (F).

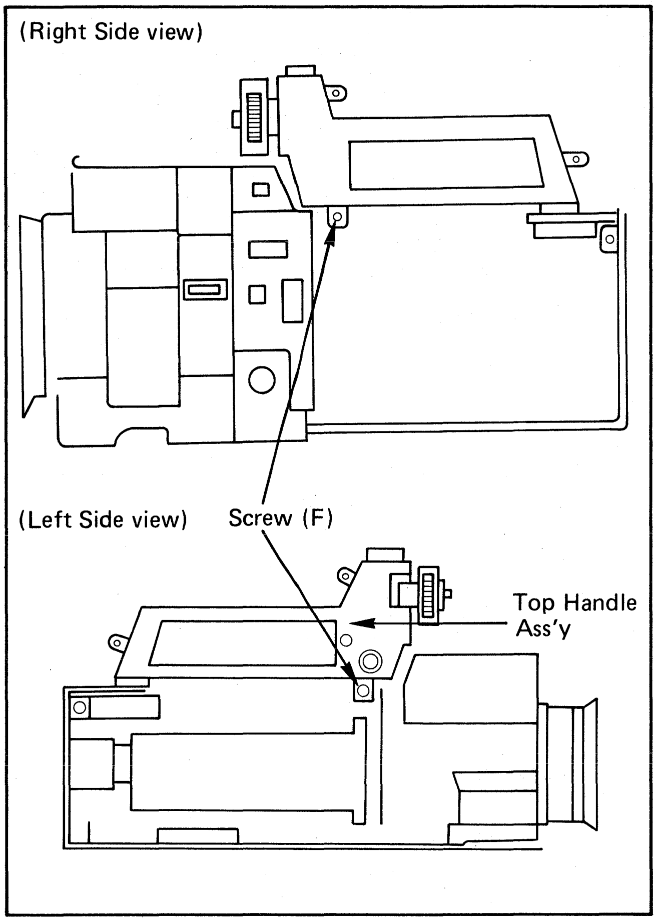

(Right Side view)
(Left Side view)
Screw (F)
Top Handle Ass'y

Fig. R6

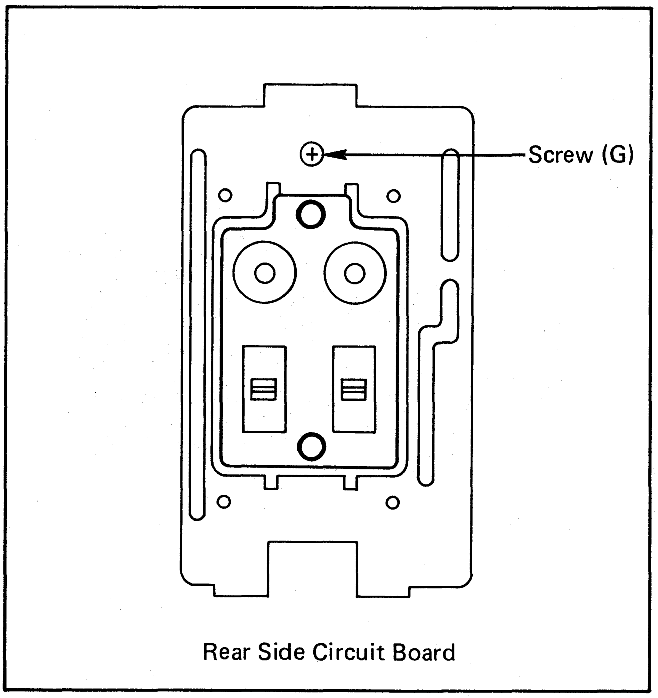

Screw (G)
Rear Side Circuit Board

Fig. R7

4-3. Unscrew a screw (G) and remove the top handle assembly.

4-4. Unscrew a screw (H) and remove the P.C.B plate (A) (see Fig. R8).

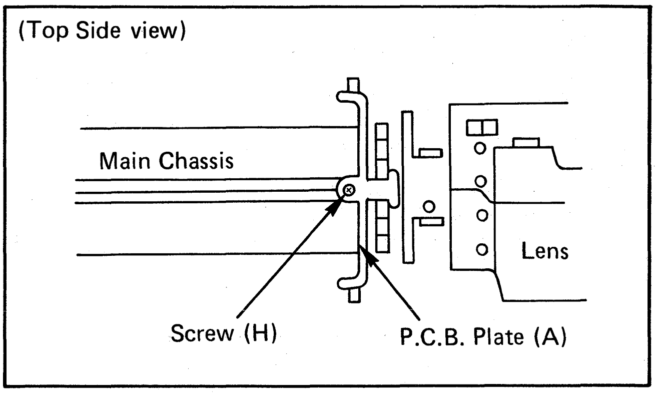
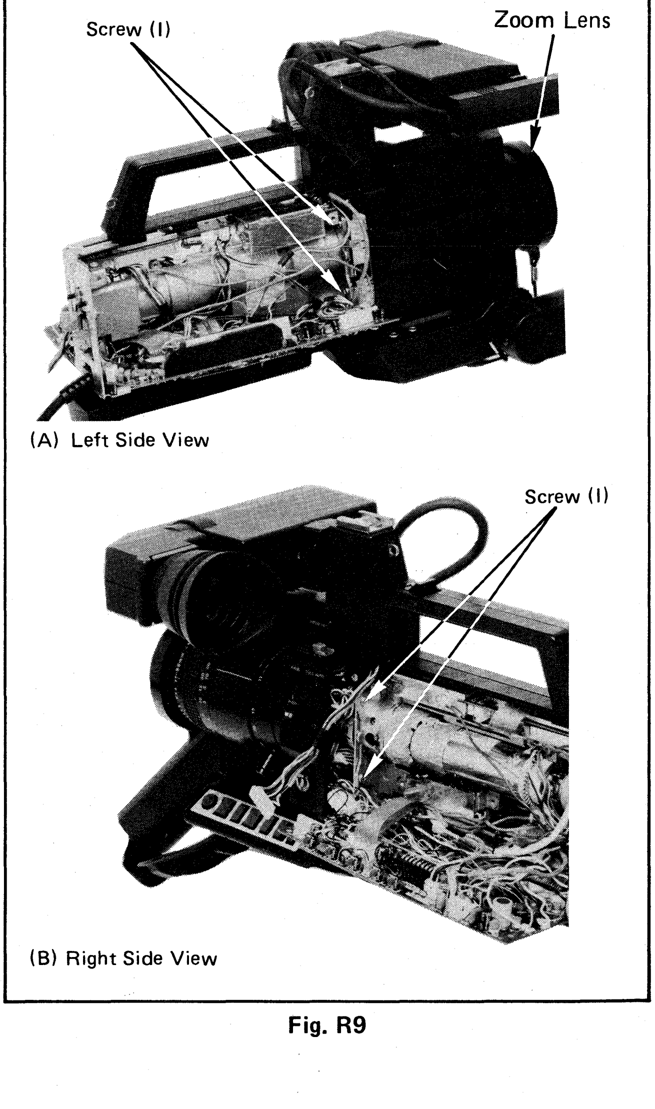

(Top Side view)
Main Chassis
Lens
Screw (H)
P.C.B. Plate (A)

Fig. R8

4-5. Unscrew 4 screws (I) and remove the zoom lens (see Fig. R9).
Then, disconnect a connector (P607).


Screw (I)
Zoom Lens
Screw (I)

(A) Left Side View

(B) Right Side View

Fig. R9

4-6. Install the new zoom lens...
using lens cleaning tissue paper to keep the lens spotless.

4-7. Reverse the previous steps.

5. REPLACEMENT OF ZOOM MOTOR (VEKW09578)

5-1. Remove the zoom lens.
(refer to section "Replacement of the Power Zoom Lens").

5-2. Unscrew 6 screws (J) and remove the A.F. cover (see Fig. R10).

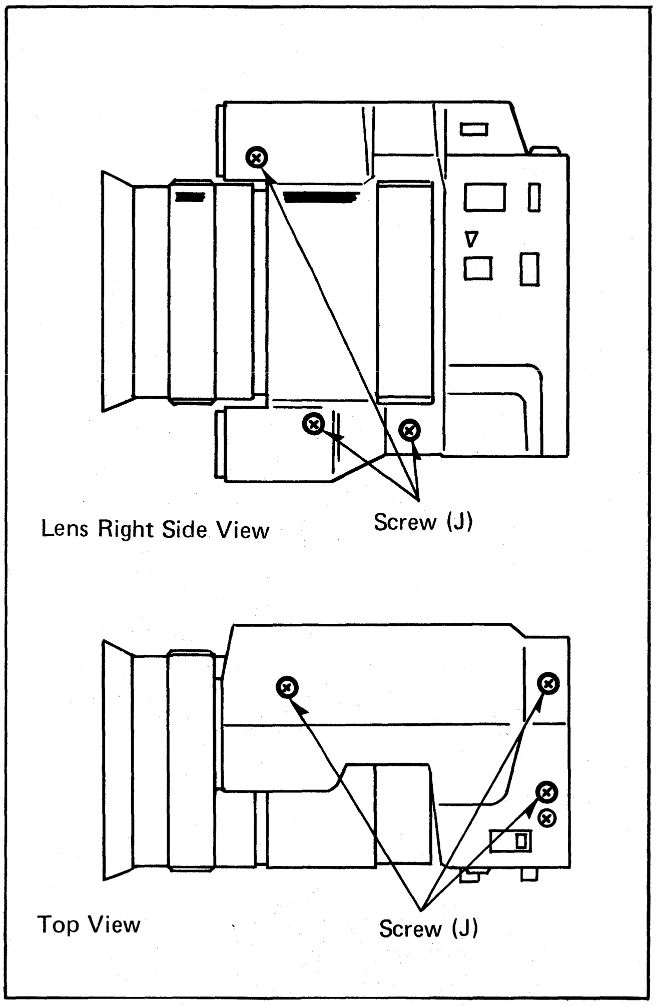

Lens Right Side View
Screw (J)
Top View
Screw (J)

Fig. R10

5-3. Unscrew a screw (K) and remove the auto focus (A) circuit board (see Fig. R11).

5-4. Unscrew 2 screws (L) and remove the zoom motor (see Fig. R11).

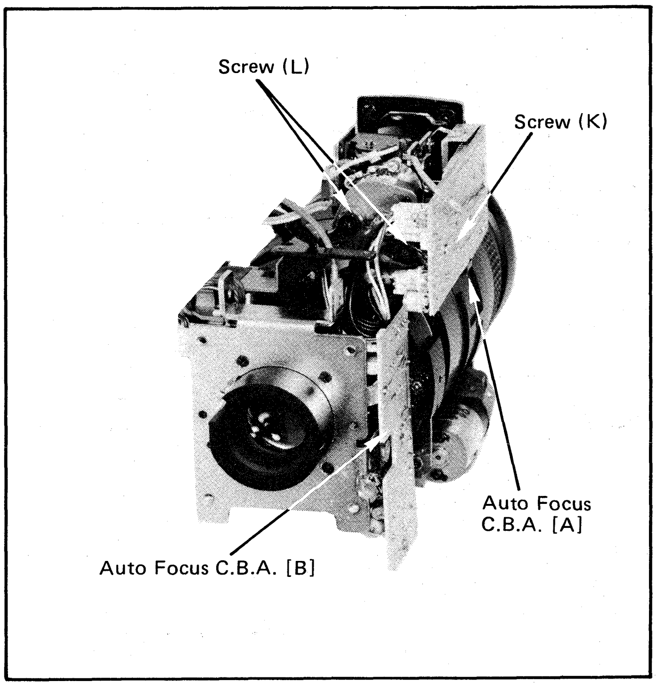

Screw (L)
Screw (K)
Auto Focus C.B.A. [A]
Auto Focus C.B.A. [B]

Fig. R11

5-5. Install the new zoom motor.

5-6. Before assembling the power zoom lens to the chassis, confirm that there are no dust on the lens surface.

5-7. Reverse the previous steps.

6. REPLACEMENT OF AUTO FOCUS MOTOR (VEKW0779)

6-1. Remove the power zoom lens (refer to section "Replacement the Power Zoom Lens").

6-2. Remove the A.F. cover (refer to section "Replacement of Zoom Motor").

6-3. Unscrew 2 screws (M). Then, remove the auto focus motor assembly (see Fig. R12).

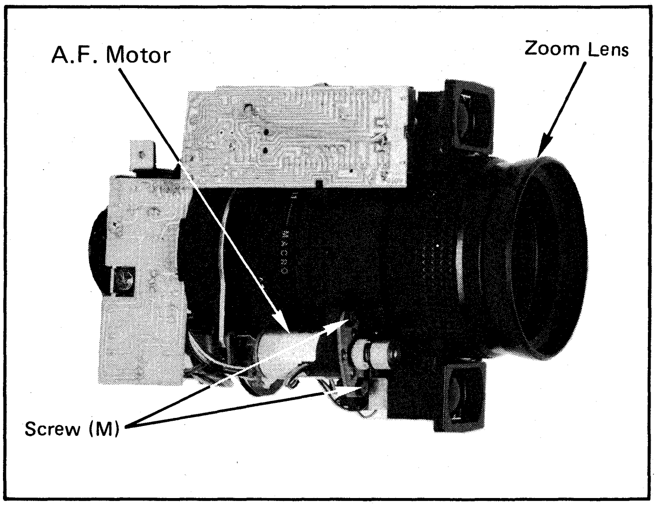

A.F. Motor
Zoom Lens
Screw (M)

Fig. R12

7. REPLACEMENT OF IRIS MOTOR ASSEMBLY (VVAW0026)

7-1. Remove the power zoom lens (refer to section "Replacement of the Power Zoom Lens).

7-2. Remove the A.F.cover (refer to section "Replacement of Zoom Motor").

7-3. Unscrew 2 screws (N) and remove the auto focus (B) circuit board (see Fig. R13).

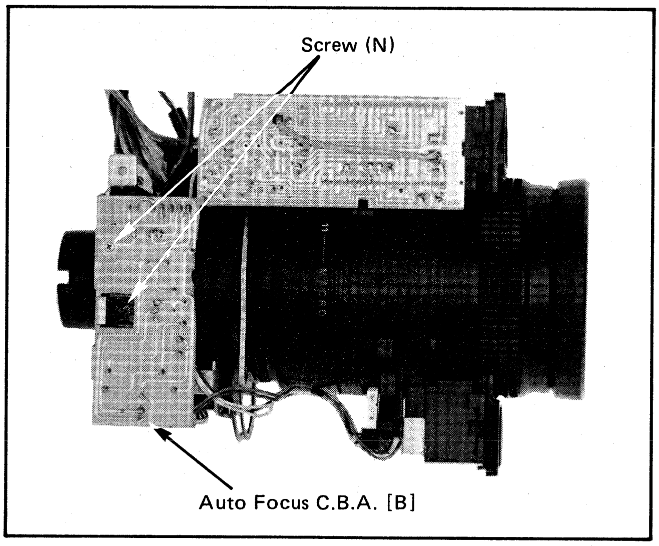

Screw (N)
Auto Focus C.B.A. [B]

Fig. R13

7-4. Unscrew 4 screws (O) and remove the hex screw (see Fig. R14, R15).

7-5. Remove the chassis.

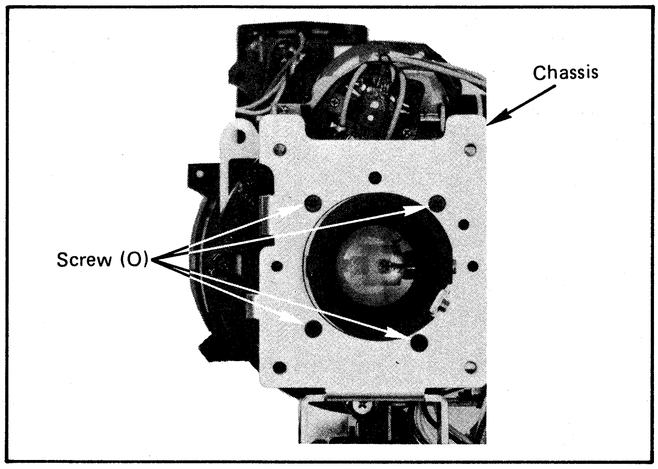

Chassis
Screw (O)

Fig. R14

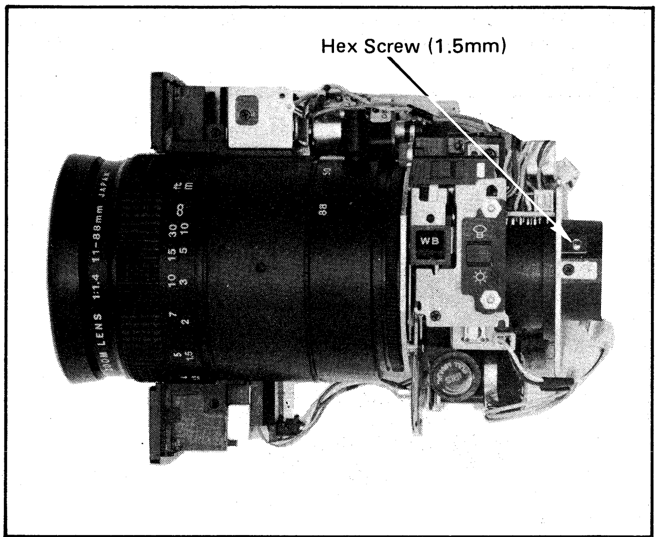

Hex Screw (1.5mm)

Fig. R15

7-6. Urscrew 2 screws (P) and remove the filter holder assembly (see Fig. R16).

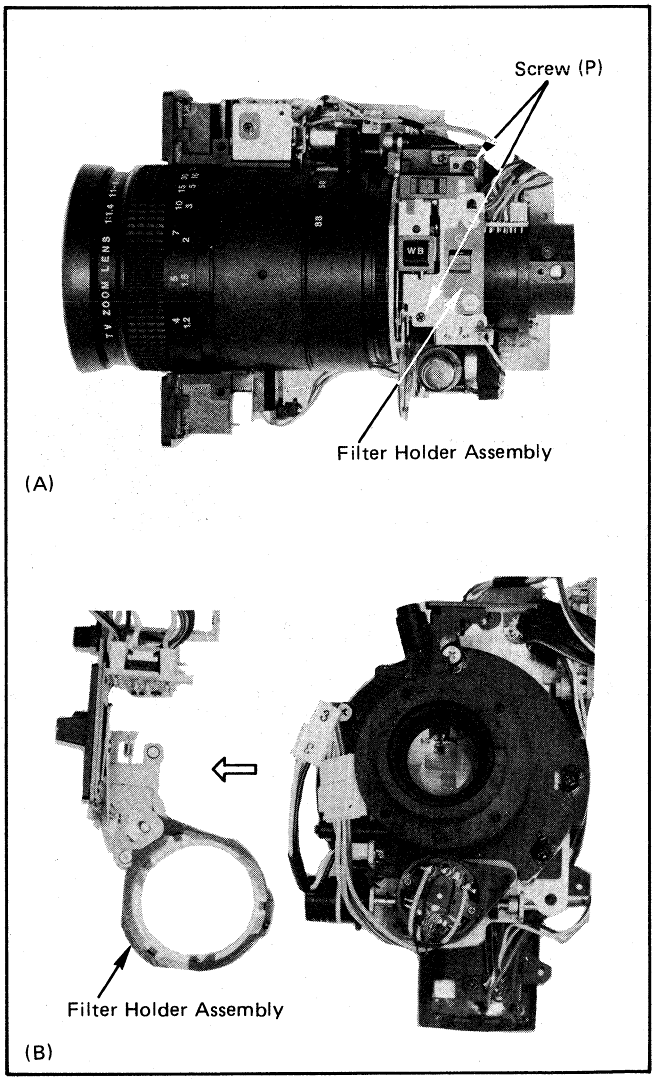

Screw (P)
Filter Holder Assembly
(A)
Filter Holder Assembly
(B)

Fig. R16

7-7. Unscrew 4 screws (Q) and remove relay lens assembly with iris motor assembly (see Fig. R17).

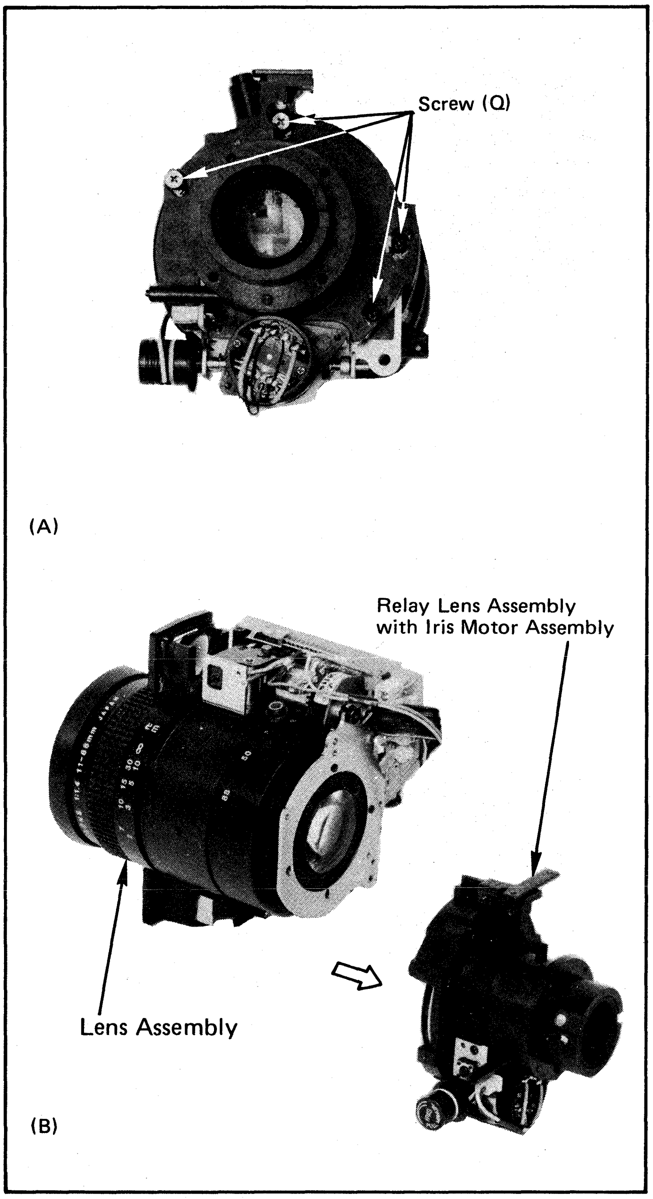

Screw (Q)
(A)
Relay Lens Assembly with Iris Motor Assembly
Lens Assembly
(B)

Fig. R17

7-8. Unscrew 3 screws (R) and remove the iris motor assembly (see Fig. R18).

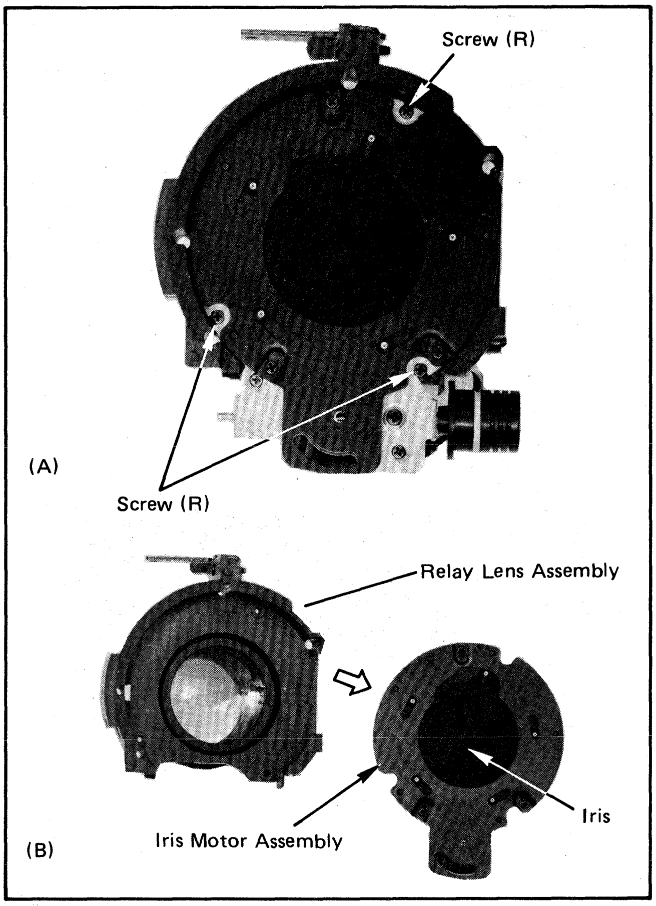

Screw (R)
(A)
Screw (R)
Relay Lens Assembly
Iris
Iris Motor Assembly
(B)

Fig. R18

7-9. Install the new iris motor assembly... before assembling the iris motor assembly to the chassis, confirm that there are no dust on the iris motor assembly.

7-10. Reverse previous steps.

ELECTRICAL ADJUSTMENT PROCEDURES
TEST EQUIPMENT/TOOL LIST

1. Light Box W/Chart

	Part Number
Light Box W/Chart Set	VFKS002
Gray Scale Chart	VFKS002A
Color Chart	VFKS002B
Registration Chart	VFKS002C
Resolution Chart	VFKS002D
Light Box	VFKS002Y

Reflection Chart

	Part Number
Reflection Chart Set	VFKS003
Gray Scale Chart	VFKS003A
Color Chart	VFKS003C
Registration Chart	VFKS003D
Color Sheet	VFKS003E

2. 3200 degrees K Studio Light (See your local photo supply dealer):
   Minimum requirement is 2 flood lights about 350-500 watts each.
3. Luxmeter
4. FM Detector
   Part No.-----VFKS001C
5. Oscilloscope
   Dual Trace,25MHz, 2mV/DIV.
   Minimum Sensitivity with Delay Mode.
6. Vector Scope
7. VTVM or Digital Voltmeter
8. Tripod
9. Frequency Counter
10. Hex Wrench (1.5mm/7mm).

PREPARATION:

1. Preset the following items.

a. R/B Color Control Knobs
...Center position (Detent position)
b. Iris Control Switch
...AUTO position
c. Color Temperature Correction Switch
...Indoor position
d. Standby Switch
...Operate position
e. Negative/Positive Reverse Switch
...Normal position
f. AWB Select Switch
...AUTO position
In this case, do not push WB switch

(1) VOLTAGE ADJUSTMENT
(1)-1 +6V ADJUSTMENT

TP	ADJ.	LENS IRIS	CHART
PIN 4 OF C. B.A.	VR3501		
M. EQ.		SPEC.	
D.V.M.		6.2V ± 0.05V	

1. Adjust the +6V control VR3501 so that the DC voltage at pin 4 of the Power Supply C.B.A is 6.2V +- 0.05V.

(1)-2 +7.5V ADJUSTMENT

TP	ADJ.	LENS IRIS	CHART
TP322	VR3502		
M. EQ.		SPEC.	
D.V.M.		7.5V ± 0.02V	

1. Adjust the +7.5V control VR3502 so that the voltage at TP322 is 7.5V +- 0.02V.

(1)-3 OSC ADJUSTMENT

TP	ADJ.	LENS IRIS	CHART
TP320	C379		
M. EQ.		SPEC.	
FREQUENCY COUNTER		3.579545MHz ± 50Hz	

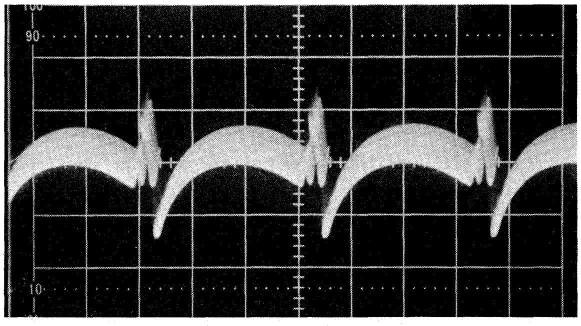
1. Adjust the OSC control C379 so that the frequency at TP320 is 3.579545MHz +- 50Hz.

(2). RELEASE THE DYNAMIC FOCUS

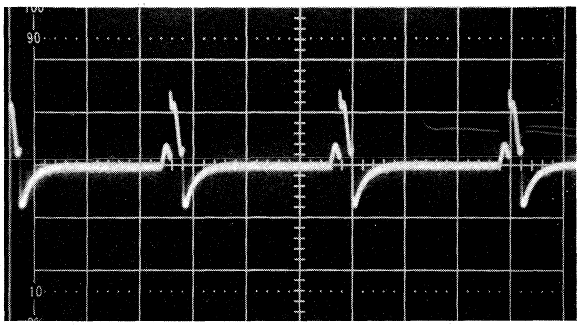
TP	ADJ.	LENS IRIS	CHART
TP313	V335(V) V333(V) V336(H) V334(H)	CLOSE	
M. EQ.		SPEC.	
OSCILLOSCOPE		SIGNAL WAVEFORM IS FLAT	

1. Set the iris cotrol to manual and close the lens iris and connect the scope to TP313 (H.rate).
2. Adjust the Dynamic Focus control VR336 (horizontal sawtooth) and VR334 (horizontal parabola) so that the signal waveform is flat as possible.

Unacceptable



Correct

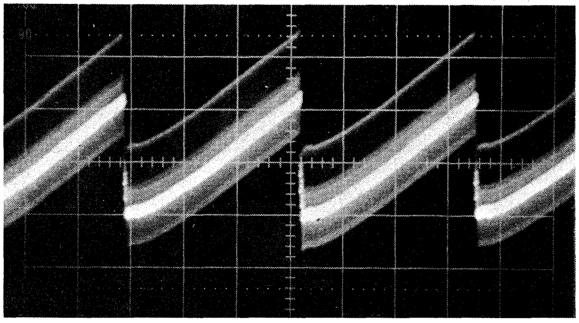


0.5V/20μsec. div.

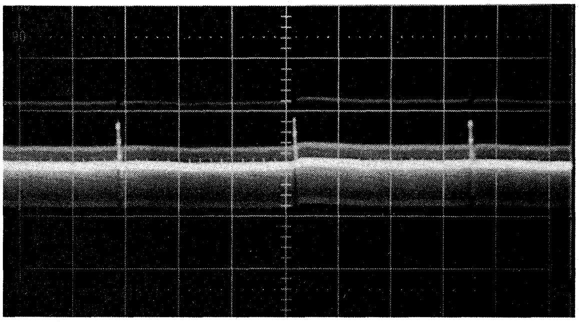
Fig. E1

3. Trigger the scope at V.rate.
4. Adjust the Dynamic Focus controls VR335 (vertical parabola) and VR333 (vertical sawtooth) so that the signal waveform is flat as possible.

Unacceptable



Correct



5V/5msec. div.

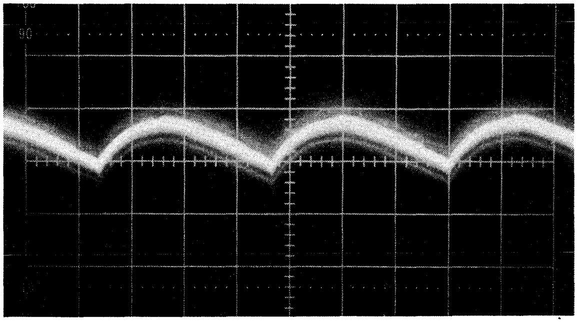
Fig. E2

(3). RELEASE THE COLOR SHADING

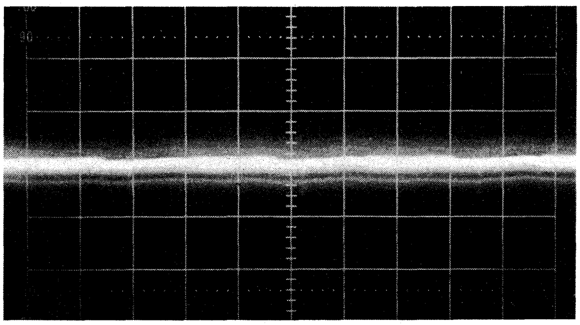
TP	ADJ.	LENS IRIS	CHART
TP362 (R) TP327 (B)	VR337B-(H) VR340B-(H) VR338B-(V) VR339B-(V) VR341R-(H) VR344R-(H) VR342R-(V) VR343R-(V)	CLOSE	
M. EQ.		SPEC.	
OSCILLOSCOPE		WAVEFORMS (R AND B) ARE MINIMIZED AND FLAT.	

1. Set the iris control to manual and close the lens iris, and connect the scope to TP326(V.rate).
2. Adjust the Color Shading (B) controls VR338 (vertical sawtooth) and VR339 (vertical parabola) so that the waveform is flat as possible.

Unacceptable



Correct



0.2V/5msec. div.

Fig. E3

3. Change to trigger the scope to H.rate, and adjust the Color Shading (B) controls VR340 (horizontal parabola) and VR337 (horizontal sawtooth) so that the signal waveform is flat and minimized as possible.

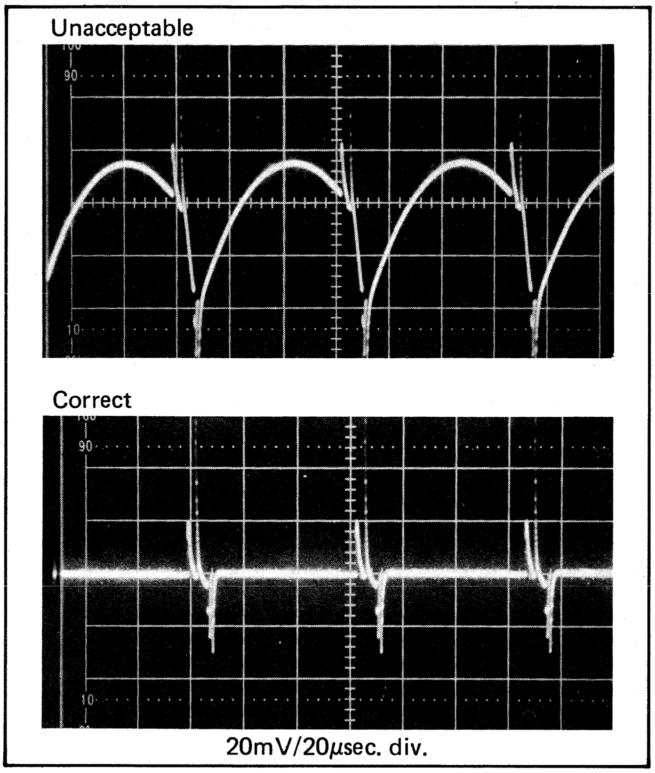


Fig. E4

4. Change to connect the scope from TP326 to TP327 (V.rate).
5. Adjust the Color Shading (R) controls VR342 (vertical sawtooth) and VR343 (vertical parabola) as same method with (B) adjustment.
6. Change to trigger to H.rate, and adjust the Color Shading (R) controls VR341 (horizontal parabola) and VR344 (horizontal sawtooth) as same method with (B) adjustment.

(4). RELEASE THE COLOR GAMMA

TP	ADJ.	LENS IRIS	CHART
	VR303 VR304 VR305 VR306 VR307 VR308 VR309 VR310		
M. EQ.		SPEC.	
		CENTER POSITION	

1. Set the Color Gamma controls VR303,VR304, VR305, VR306, VR307 VR308, VR309 and VR310 at the center position.

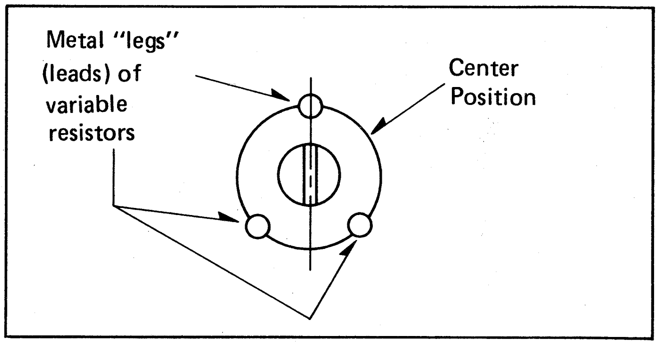


Fig. E5

(5). RELEASE THE HIGH LUMINANCE CHROMA CLIP

TP	ADJ.	LENS IRIS	CHART
	VR316		
M. EQ.		SPEC.	
		FULLY COUNTER CLOCKWISE (FOIL SIDE)	

1. Turn the High Luminance Chroma Clip control VR316 fully counter clockwise from the foil side.

(6). BEAM CURRENT ADJUSTMENT

A. 5MHz Color Video Camera

TP	ADJ.	LENS IRIS	CHART
TP301	VR605 VR301	AUTO (OPEN)	STRONG LIGHT INTENSITY OBJECT
M. EQ.		SPEC.	
OSCILLOSCOPE		2.0 ± 0.1 Vp-p 2.3 ± 0.1 Vp-p	

B. 6MHz Color Video Camera

TP	ADJ.	LENS IRIS	CHART
TP301	VR605 VR301	AUTO (OPEN)	STRONG LIGHT INTENSITY OBJECT
M. EQ.		SPEC.	
OSCILLOSCOPE		FIG. E7 FIG. E8	

1. Set the iris control switch to auto.
2. Connect the jumper between TP307 and pin 6 of connector B303.
3. Connect the oscilloscope to TP301 (V.rate).
4. Aim the Camera at the far left edge of a light box or other small light source in order to saturate the beam.

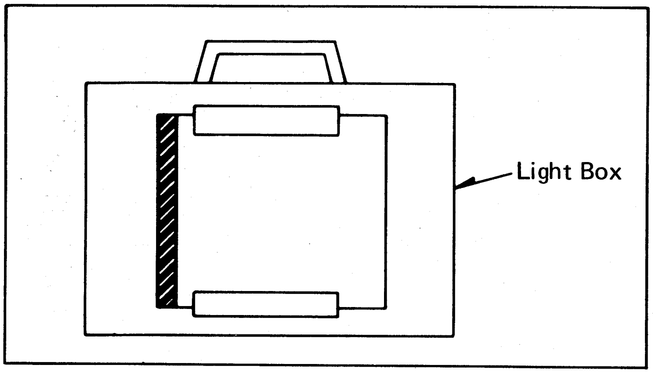


Fig. E6

5-A. (5MHz Color Video Camera)
Adjust the Beam Current 1 control VR605 so that the signal clipping occurs at 2.0 +- 0.1Vp-p.

5-B. (6MHz Color Video Camera
Adjust the Beam Current 1 control VR605 so that the signal clipping occurs at 1.4 +- 0.1Vp-p.

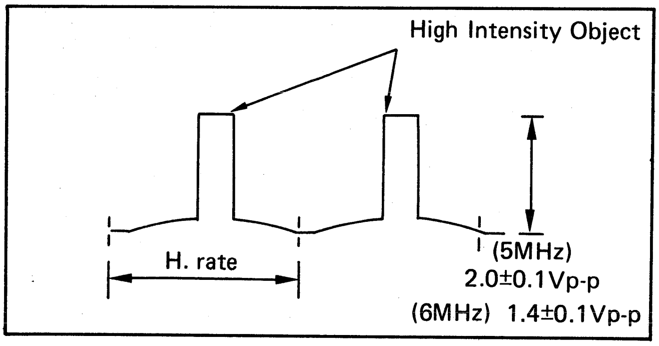

High Intensity Object
H. rate
(5MHz)
2.0±0.1Vp-p
(6MHz) 1.4±0.1Vp-p

Fig. E7

6. Remove a jumper

7-A. (5MHz Color Video Camera)
Adjust the Beam Current 2 control VR301 so that the signal clipping occurs at 2.3 +- 0.1Vp-p.

7-B. (6MHz Color Video Camera)
Adjust the Beam Current 2 control VR301 so that the signal clipping occurs at 2.0 +- 0.1Vp-p.

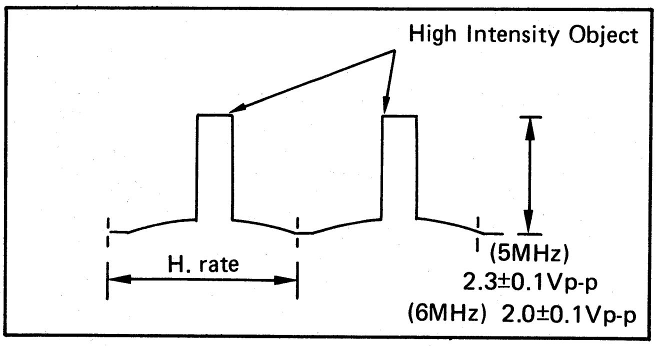

High Intensity Object
H. rate
(5MHz)
2.3±0.1Vp-p
(6MHz) 2.0±0.1Vp-p

Fig. E8

Note:
Be careful not to damage the pick-up tube with too strong light.

(7) TARGET ADJUSTMENT

TP	ADJ.	LENS IRIS	CHART
PIN 5 OF B302	VR601	CLOSE	
M. EQ.		SPEC.	
D.V.M.		STAMPED VOLTAGE PLUS 1V ± 1V	

1. Set the iris control switch to the manual, and colse the lens iris.
2. Connect the D.V.M to pin 5 of B302 on the process circuit board.
3. Now adjust the Target Voltage control VR601 so that the voltage at pin 5 of B302 is equal to the Esj value stamped on the Newvicon neck plus 1V +- 1V.

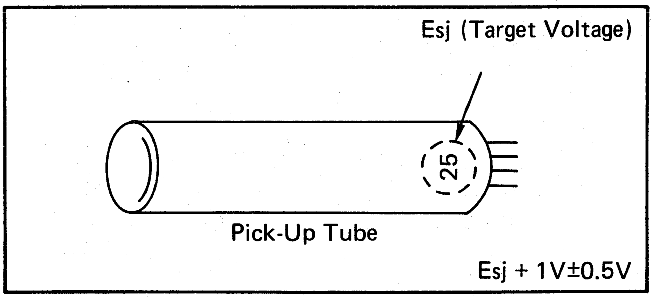

Esj (Target Voltage)
25
Pick-Up Tube
Esj + 1V±0.5V

Fig. E9

(8) BIAS CURRENT ADJUSTMENT

TP	ADJ.	LENS IRIS	CHART
TP301	VR606	CLOSE	
M.EQ.		SPEC.	
OSILLOSCOPE		50mV ± 5mVp-p	

1. Set the iris control switch to the manual, and close the lens iris.
2. Connect the oscilloscope to TP301 (V.rate).
3. Adjust the Bias Current control VR606 so that the waveform level is 50mV +- 5mVp-p.

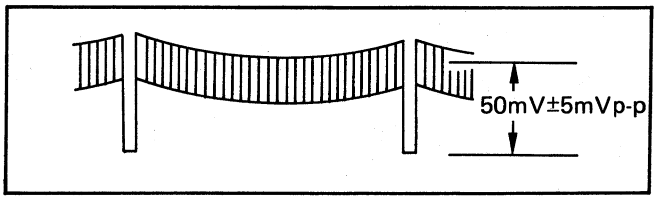


Fig. E10

(9) OPTICAL BLACK OFFSET and DARK SHADING ADJUSTMENT

TP	ADJ.	LENS IRIS	CHART
TP316	VR352 (O.B) VR332 (H) VR330 (H) VR331 (V) VR329 (V)	CLOSE	
M. EQ.		SPEC.	
OSCILLOSCOPE		SIGUAL IS TOUCHED TO BLANKING. WAVEFORM IS FLAT.	

1. Set the sensitivity (stand-by) switch to the Gain Up position, and set the iris control switch to the manual and close the lens iris.
2. Connect the oscilloscope to TP316 (V.rate).
3. Adjust the Optical Black Offset control .VR352 so that the under portion of the waveform carrier is just touched to blanking line.

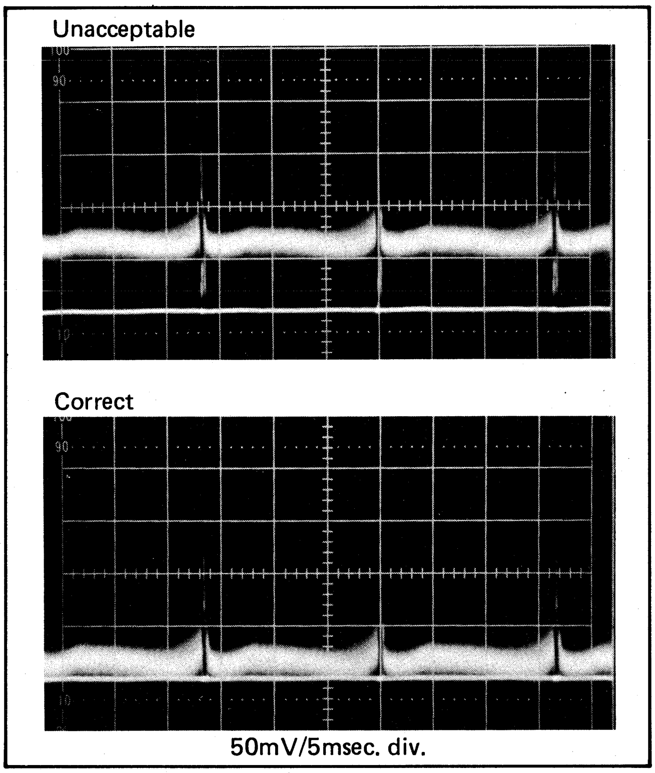


Fig. E11

4. Adjust the Dark Shading controls VR331 (vertical parabola) and VR329 (vertical sawtooth) so that the signal waveform is flat.

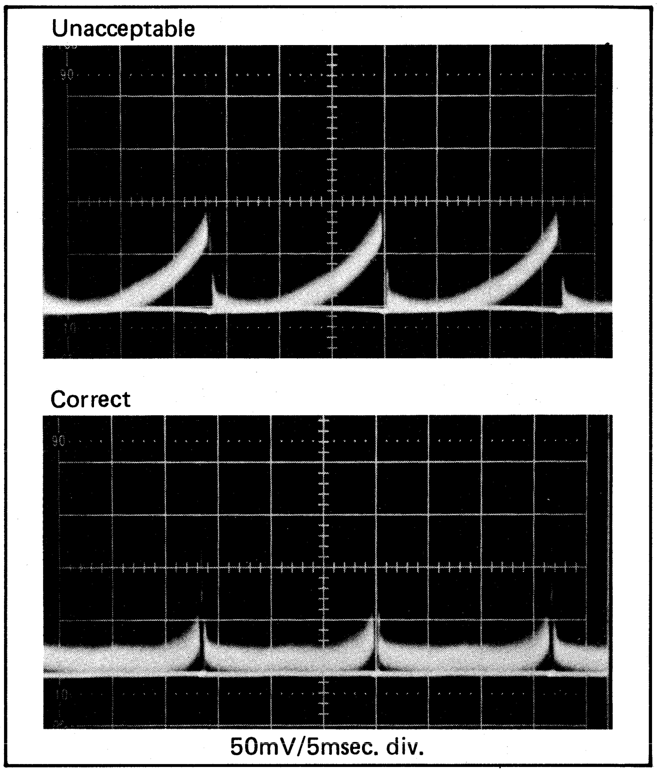


Fig. E12

5. Change to trigger the scope at H.rate, and adjust the Dark Shading controls VR332 (horizontal sawtooth) and VR330 (horizontal parabola) so that the signal waveform is flat.

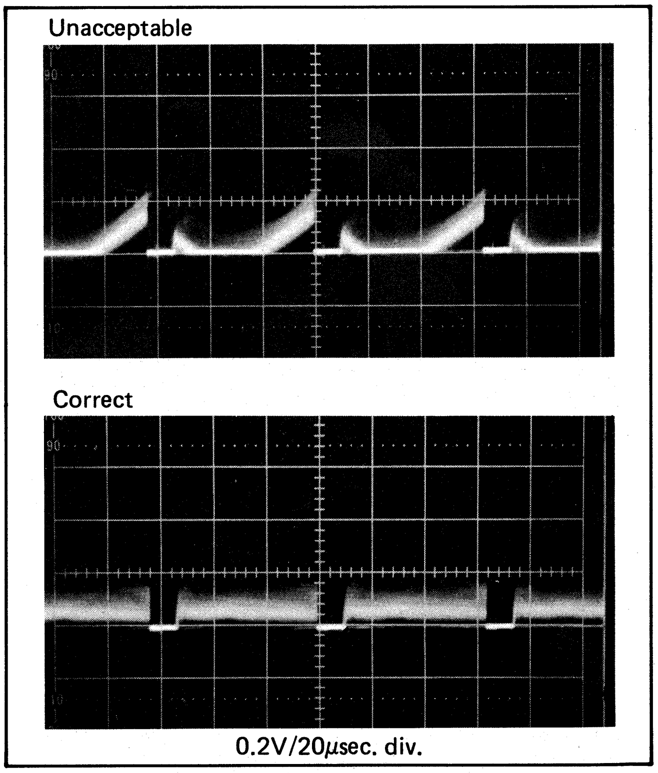


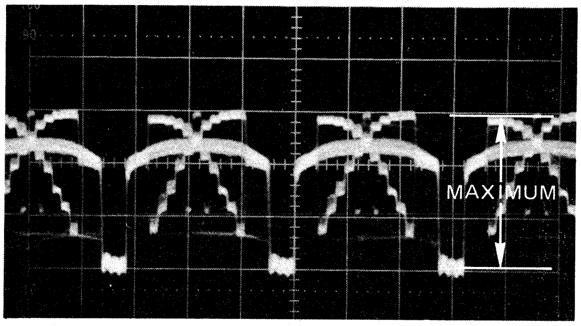
Fig. E13

6. Check step 3, if adjustment is necessary, do again.
7. Set the sensitivity (stand-by) switch to the operate position.
8. Finally, set the iris control to AUTO.

(10) VERTICAL EDGE/BALANCE ADJUSTMENT

TP	ADJ.	LENS IRIS	CHART
TP312 TP311	VR323 VR324 VR326	AUTO (OPEN)	GRAY SCALE CHART
M. EQ.		SPEC.	
OSCILLOSCOPE TV MONITOR		YL IS MAXMIZED. SIGNAL IS MINIMIZED COLOR ERROR IS ELIMINATED.	

1. Aim the camera at the gray scale chart.
2. Connect the oscilloscope to TP312(H.rate).
3. Adjust the Vertical Edge control VR323 so that the YL signal is maximized.

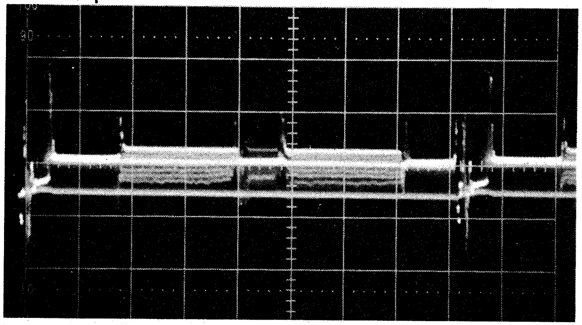


50mV/20μsec. div.

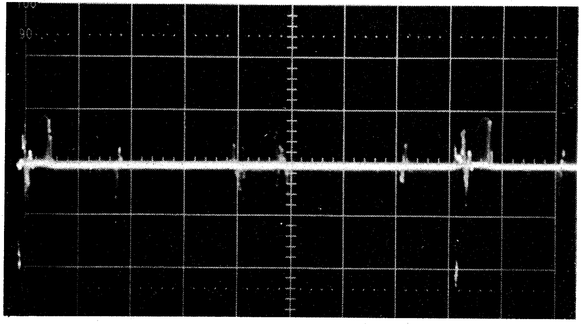
Fig. E14

4. Then, connect the scope to TP311 (V.rate).
5. Adjust the Vertical Edge Balance control VR324 so that the vertical edge correction signal is minimized.

Unacceptable



Correct



0.5V/2msec. div.

Fig. E15

6. Observe the picture on the monitor and adjust the Vertical Edge Gain control VR326 until the color error on the upper and lower edges of the gray scale is eliminated. (Coarse)

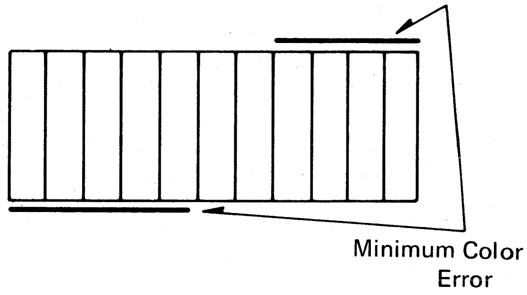


Fig. E16

(11) INPUT LEVEL, AUTO IRIS AND NTSC PEDESTAL ADJUSTMENT

TP	ADJ.	LENS IRIS	CHART
TP301 TP318	VR311 VR312	AUTO (OPEN)	GRAY SCALE CHART
M. EQ.		SPEC.	
OSILLOSCOPE		SIGNAL IS 400mVp-p SIGNAL IS 0.7 ± 0.01Vp-p	

1. Aim the camera at the gray scale chart and set the iris control to "Auto".
2. Connect the oscilloscope to TP301(H.rate).
3. Turn the Focus control VR604 fully clockwise from the foil side.
4. Adjust the Auto Iris control VR311 so that the signal level is 400mVp-p.

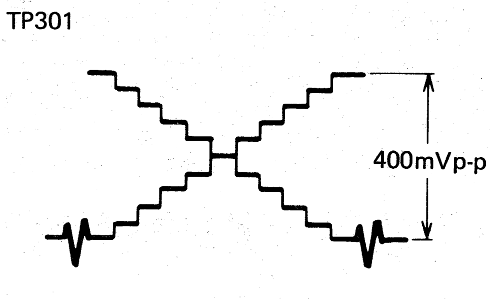


Fig. E17

5. Connect the oscilloscope to TP302 (H.rate).
6. Adjust the Focus control VR604 so that the signal level is maximized.
7. Set the iris control to manual and close the lens iris.
8. Connect the oscilloscope to TP318 (H.rate).
9. Check the NTSC pedestal that is 0.07V +- 0.02V.

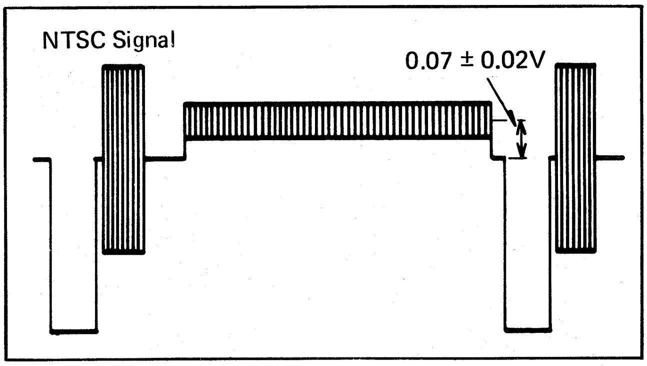


Fig. E18

10. If NTSC pedestal is not proper level, re-adjust the OPTICAL BLACK OFFSET ADJUSTMENT (ITEM 9) and VERTICAL EDGE BALANCE ADJUSTMENT (ITEM 10).
11. Set the iris control to auto and aim the camera at the gray scale chart.
12. Adjust the NTSC Pedestal control VR312 so that the signal level is 0.7V +- 0.01Vp-p.

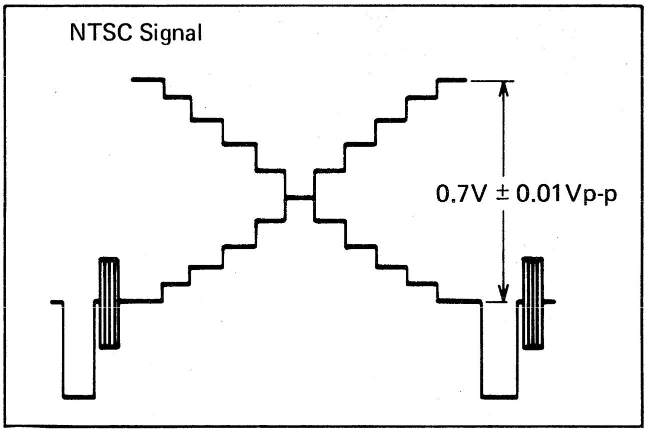


Fig. E19

(12) BACK FOCUS ADJUSTMENT

TP	ADJ.	LENS IRIS	CHART
	RELAY LENS SLIDE SCREW	AUTO (OPEN)	OBJECT
M. EQ.		SPEC.	
TV MONITOR		BEST FOCUS	

1. Aim the camera at an object more than 10 meters (33 feet) away, and zoom all the way in (maximum close up).
2. Loosen the hex screw using a 1.5mm hex wrench on the relay lens.

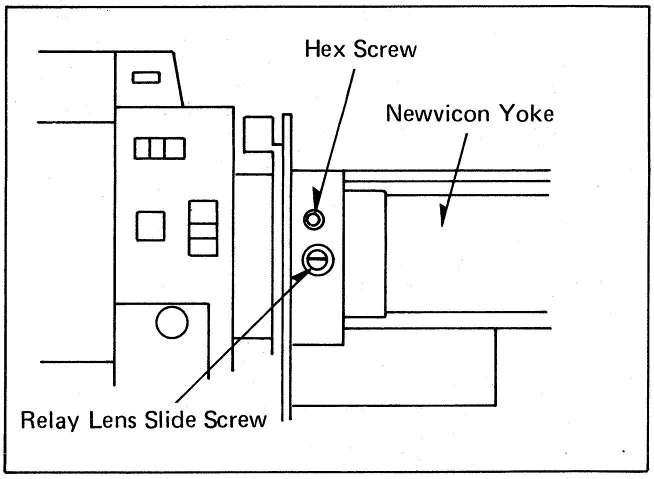


Fig. E20

3. Adjust the Lens Focus Ling to best focus.
4. Zoom all the way back and adjust the relay lens slide screw until the sharpest focus is obtained.
5. Repeat this procedure--zoom in, focus, zoom out, and adjust--until the best focus is obtaind over the entire zoom range.
6. Tighten the hex screw using a 1.5mm hex wrench on the relay lens. Do not over-tighten the hex screw. You may crack the lens assembly or the lens housing.

(13) NEWVICON TURNING (NEWVICON POSITION) ADJUSTMENT

TP	ADJ.	LENS IRIS	CHART
TP310	NEW VICON SOCKET	AUTO (OPEN)	WHITE CHART
M. EQ.		SPEC.	
OSILLOSCOPE		MINIMUM BEAT	

1. Aim the camera at the white chart or white screen.
2. Connect the oscilloscope to TP310 (V.rate).
3. Adjust the Focus Control VR604 so that the signal level is maximized.

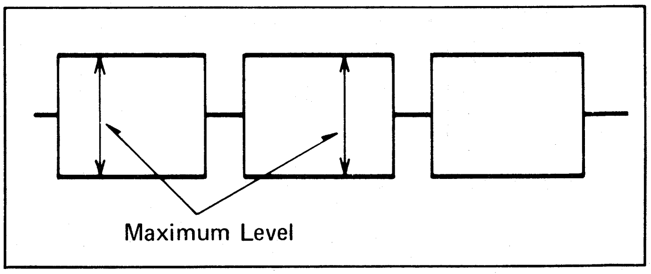


Fig. E21

4. Delay the sweep of the center portion of the vertical signal waveform and observe a few horizontal lines.
5. Loosen the newvicon clamp screw on the deflection yoke assembly as shown in Fig. E22.

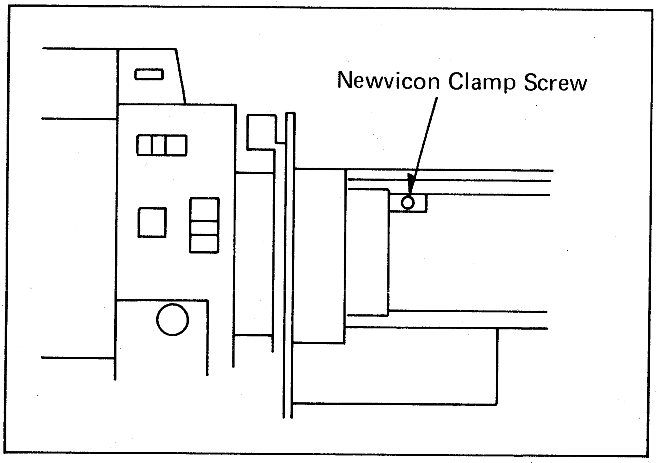


Fig. E22

6. Remove the rear panel, unscrew two screws and remove the rear side circuit board.
7. Now, rotate the newvicon socket from the back, using a 7mm hex wrench, so that the waveform for each horizontal scan line is free from best and ripple.
Do not worry about differences in amplitude.

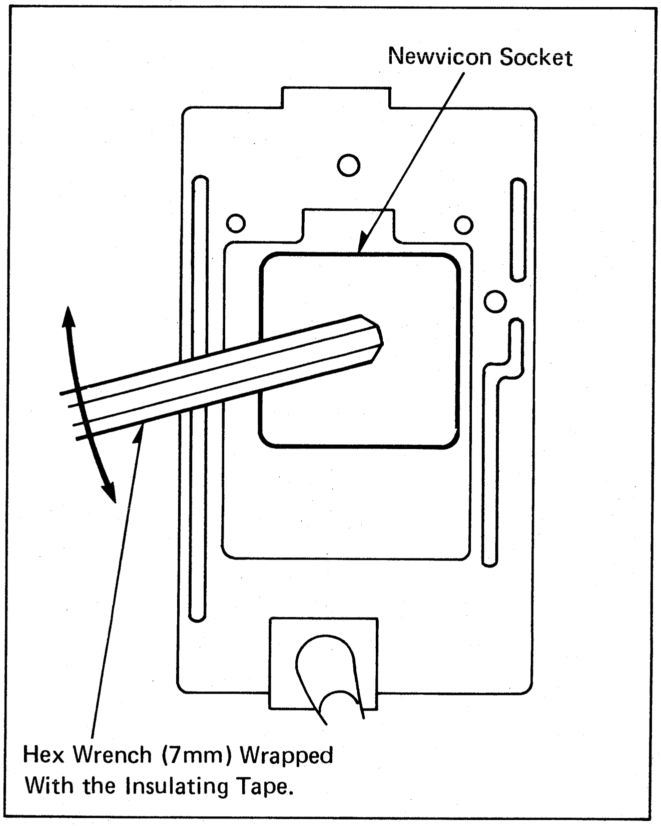


Fig. E23

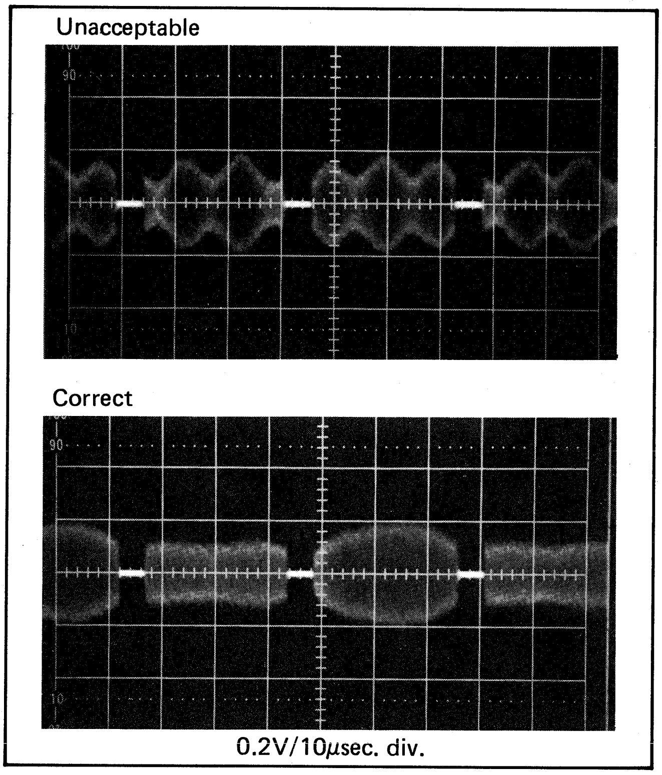


Fig. E24

Note:
Be careful not to touch the connector on the newvicon. The high voltage at the connector may give you a severe shock and perhaps damage the newvicon.

8. Finally, tighten the newvicon clamp screw. Return the rear circuit board and replace the two mounting screws.

(14) VERTICAL CENTERING AND VERTICAL SIZE ADJUSTMENT

TP	ADJ.	LENS IRIS	CHART
TP310	VR602 VR603	AUTO (OPEN)	WHITE CHART
M. EQ.		SPEC.	
OSCILLOSCOPE TV MONITOR		MINIMUM BEAT DO NOT SHIFT	

1. Aim the camera at the white chart.
2. Connect the oscilloscope to TP310 (V.rate).

3. Adjust the Vertical Size control VR602 so that the beat in the signal is minimized.
After adjustment, there should be a maximum beat per envelope.

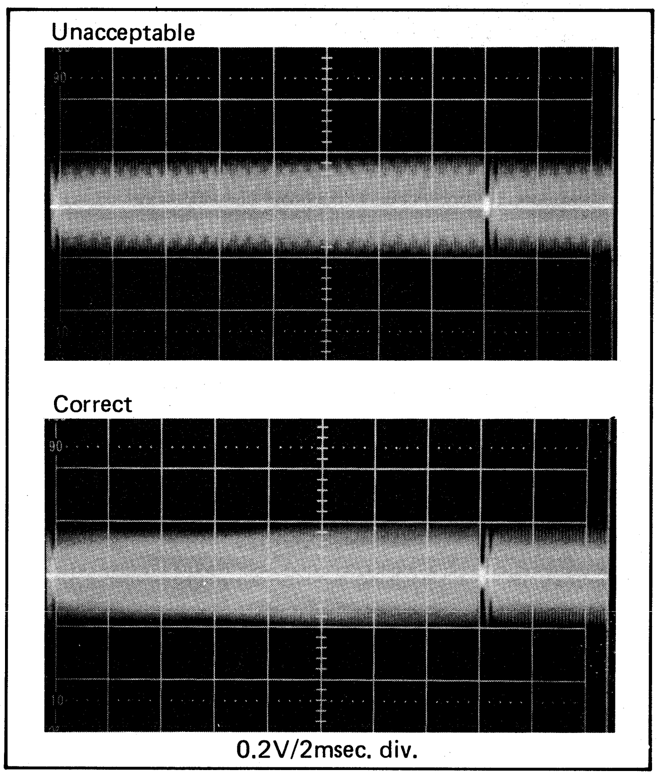

Unacceptable
Correct
0.2V/2msec. div.

Fig. E25

4. Now aim the camera at a small object so that the object is center of the monitor screen.
5. Adjust the Vertical Centering control, VR603, so that the small object does not shift vertically, when the zoom in and out are repeated a few times.

(15) HORIZONTAL SIZE, LINEARITY AND CENTERING ADJUSTMENT

TP	ADJ.	LENS IRIS	CHART
TP310 TP301 TP317	VR607 VR608 VR610 VR609	AUTO (OPEN)	WHITE CHART

M. EQ.	SPEC.
OSCILLOSCOPE	CARRIER IS FLAT AND MINIMIZED, 1.5μsec ± 0.1μsec.

1. Aim the camera at the white chart or white screes.
2. Set the Select Switch on the FM Detector to H.Size and Linearity position, and set the Carrier Frequency Select Switch to 5MHz or 6MHz position.

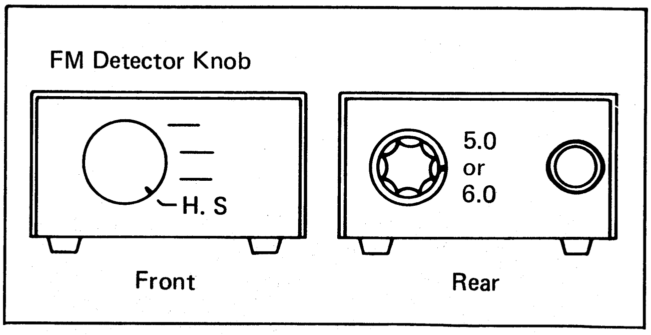

FM Detector Knob
H. S
5.0
or
6.0
Front
Rear

Fig. E26

Note:
If the 6MHz Color Video Camera is adjusted, set the switch to 6MHz position.
If the 5MHz Color Video Camera is adjusted, set the switch to 5MHz position.

3. Connect the FM Detector output to scope, input to TP310, BLK to TP319, +B to TP324 and GND to camera GND.
Trigger the scope to H.rate.

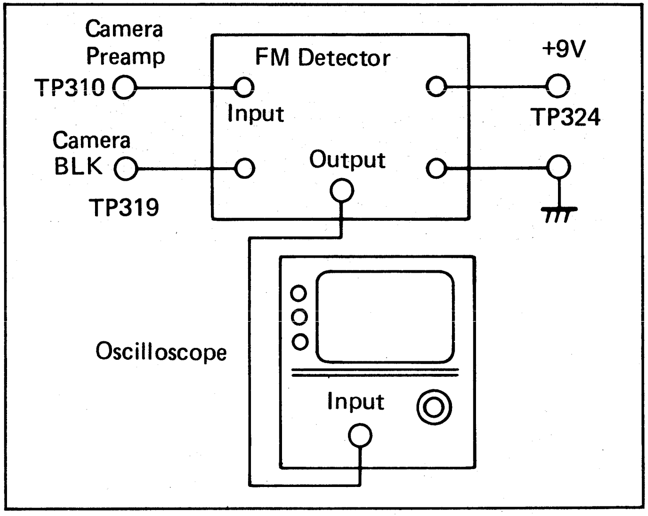
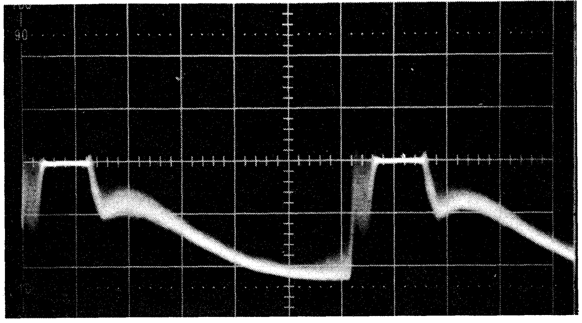

Camera
Preamp
TP310
FM Detector
Input
+9V
TP324
Camera
BLK
Output
TP319
Oscilloscope
Input

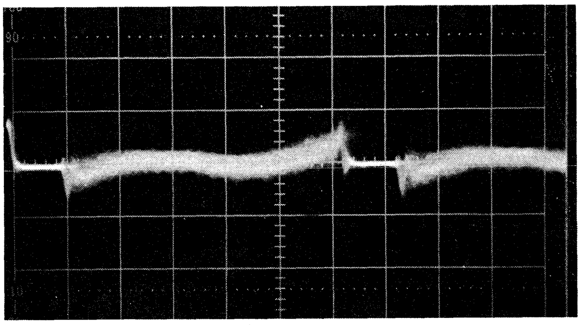
Fig. E27

4. Adjust the Horizontal Size/Linearity 1 control VR607, Horizontal Size/Linearity 2 control VR608 and Horizontal Size/Linearity 3 control VR610 so that the carrier portion is flat and minimized as possible.

Unacceptable



Correct



1V/10µsec. div.

Fig. E28

5. Remove the FM Detector, and connect the scope CH1 to TP301 and CH2 to TP317 (H.rate).
6. Use the signal at TP317 for scope trigger and observe the horizontal blanking interval at the signal by using the delay mode at the scope.
7. Adjust the Horizontal Certering control VR609 so that the time between the trailing edge at the video signal at TP301 and the raising edge of the clump pulse signal at TP317 is 1.5usec +- 0.1usec.

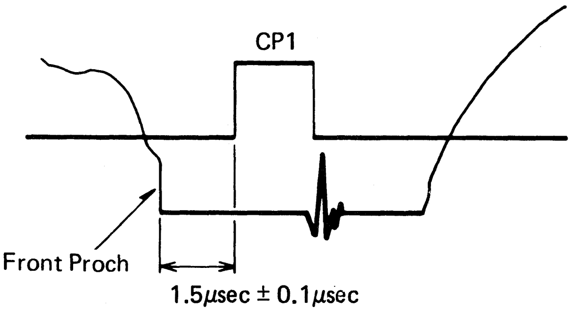
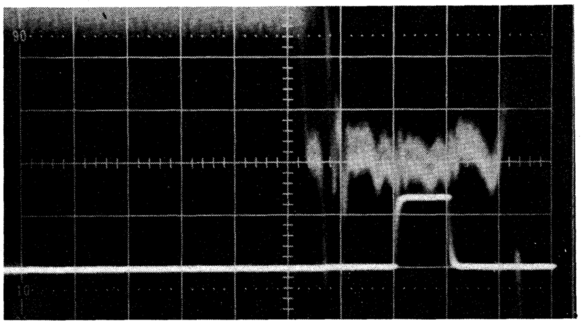


Fig. E29



0.5V/1µsec. div.

Fig. E30

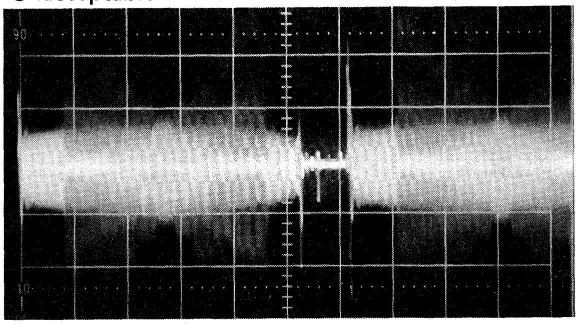
Note:
If the double trace occurs at the end at a horizontal line, reconfirm the pick-up tube turning adjustment.

(16) SIMPLIFIED RED/BLUE SIGNAL SEPARATION AND GAIN ADJUSTMENT

TP	ADJ.	LENS IRIS	CHART
TP306	VR325 VR327 VR303 VR304	AUTO (OPEN)	GRAY
			WHITE
M. EQ.		SPEC.	
OSCILLOSCOPE TV MONITOR		NOISE IS MINIHIZED. WHITE AREA IS MAXIMIZED	

1. Aim the camera at the gray scale chart.
2. Connect the oscilloscope to TP306 (H.rate).
3. Adjust the R/B Separation controls VR325 and VR327 so that the noise component is minimized.
4. Aim the camera at the white chart.
5. Then, adjust the Color Gamma (RED) control VR303 and Color Gamma (BLUE) control VR304 so that the white area in the monitor picture is maximized.

Unacceptable



0.2V/10µsec. div.

Fig. E31

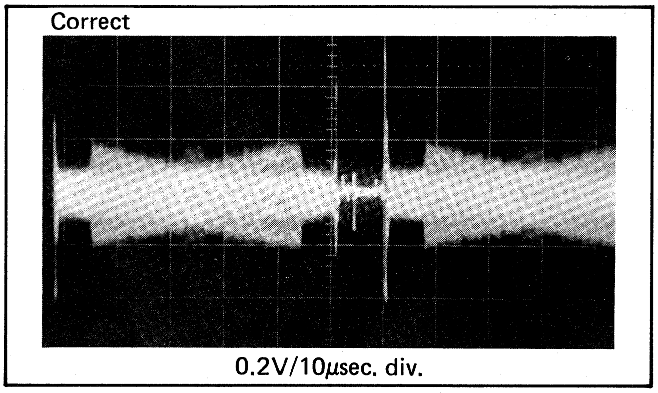


Fig. E32

(17) BEAM ALIGNMENT ADJUSTMENT

TP	ADJ.	LENS IRIS	CHART
TP308	ALIGNMENT MAGNETS	AUTO (OPEN)	WHITE CHART
M. EQ.		SPEC.	
OSCILLOSCOPE TV MONITOR		MAGENTA IS MAXIMIZED NOISE IS MINIMIZED AND FLAT	

1. Aim the camera at the white chart.
2. Adjust the Color Gamma (RED) control VR303 so that the red or magenta color appears on the monitor.
3. Adjust the Focus control VR604 so that the red or magenta color appears on center of the monitor screen.
4. Remove the paint lock from the alignment magnets.

5-A. Then while watching the color monitor, rotate the alignment magnets for minimum green tint in the center and maximum magenta (red) throughout the picture area.

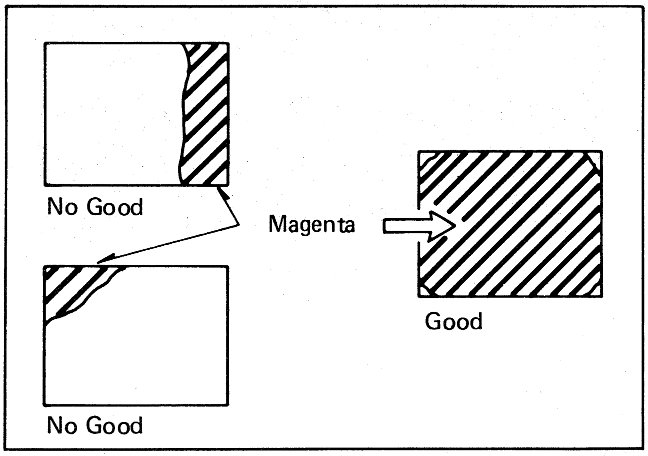


Fig. E33

5-B. Connect the scope to TP308 (H.rate). Then, while watching the scope, rotate the alignment magnets so that the noise portion is minimized and flat as possible.

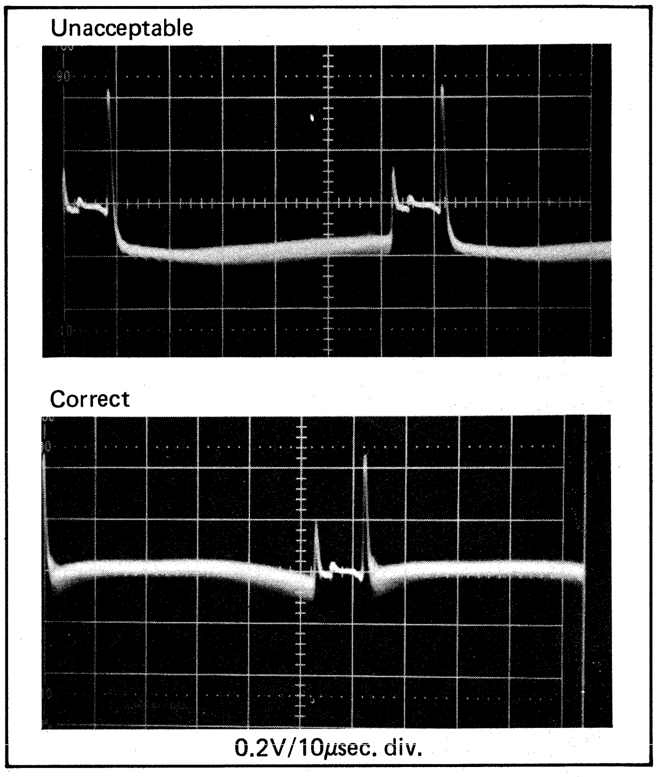


Fig. E34

6. Lock the alignment magnets by using the paint lock.
7. Adjust the Color Gamma (RED) control VR303 and Focus control VR604, after this adjustment.

Note:

Complete elimination at green corners or edge might not be achieved at this point, because dynamic focus and shading compersation remain to be set.

It might be necessary to trim up the beam aligment after the dynamic focus and color shading adjustment have been completed.

(18) DYNAMIC FOCUS ADJUSTMENT

TP	ADJ.	LENS IRIS	CHART
TP308	VR333 (V) VR335 (V) VR334 (H) VR336 (H)	AUTO (OPEN)	WHITE CHART
M. EQ.		SPEC.	
OSCILLOSCOPE		WAVEFORM IS FLAT AND MINIMIZED.	

1. Aim the camera at the white chart.
2. Adjust the Focus control VR604 so that the Lens Focus is best condition.
3. Connect the oscilloscope to TP308 (H.rate).

4. Adjust the Dynamic Focus controls VR334 (horizontal parabola) and VR336 (horizontal sawtooth) so that the signal level is minimized and flat as possible.

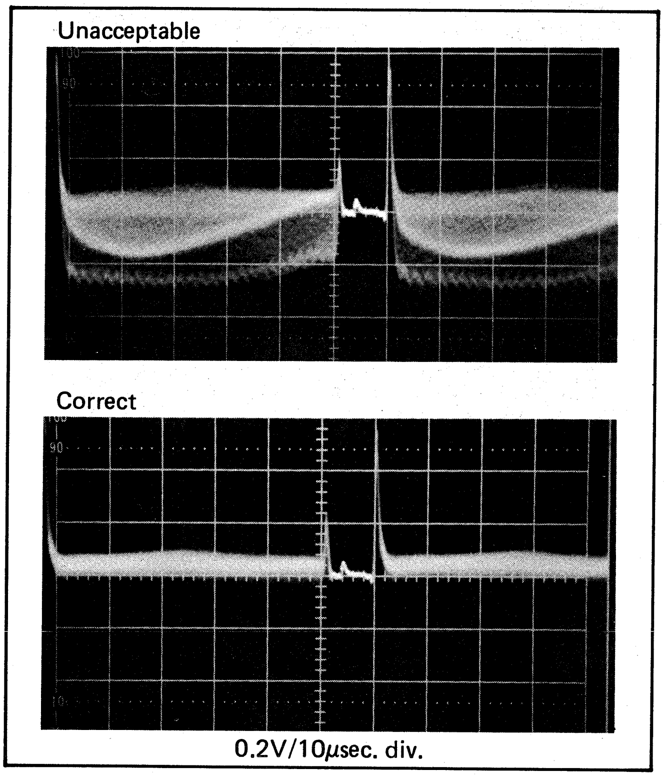


Fig. E35

5. Change to trigger to V.rate, and adjust the Dynamic Focus controls VR333 (vertical sawtooth) and VR335 (vertical parabola) so that the waveform is minimized and flat as possible.

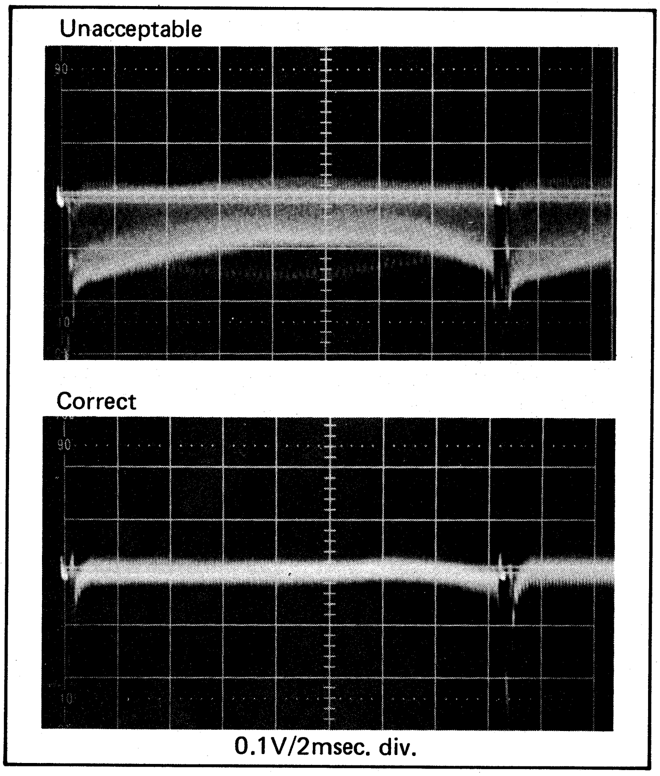


Fig. E36

6. Repeat step 4 and 5 until adjustment is best condition.

(19) COLOR SHADING ADJUSTMENT

TP	ADJ.	LENS IRIS	CHART
TP308 TP309	VR341R-(H) VR344R-(H) VR342R-(V) VR343R-(V) VR337B-(H) VR340B-(H) VR338B-(V) VR339B-(V)	AUTO (OPEN)	WHITE CHART
M. EQ.		SPEC.	
OSCILLOSCOPE		WAVEFORMS (R AND B) ARE MINIMIZED AND FLAT	

1. Aim the camera at the white chart.
2. Connect the oscilloscope to TP308 (V.rate).
3. Adjust the Color Shading (R) controls VR342 (vertical sawtooth) and VR343 (vertical parabola) so that the signal is minimized and flat as possible.

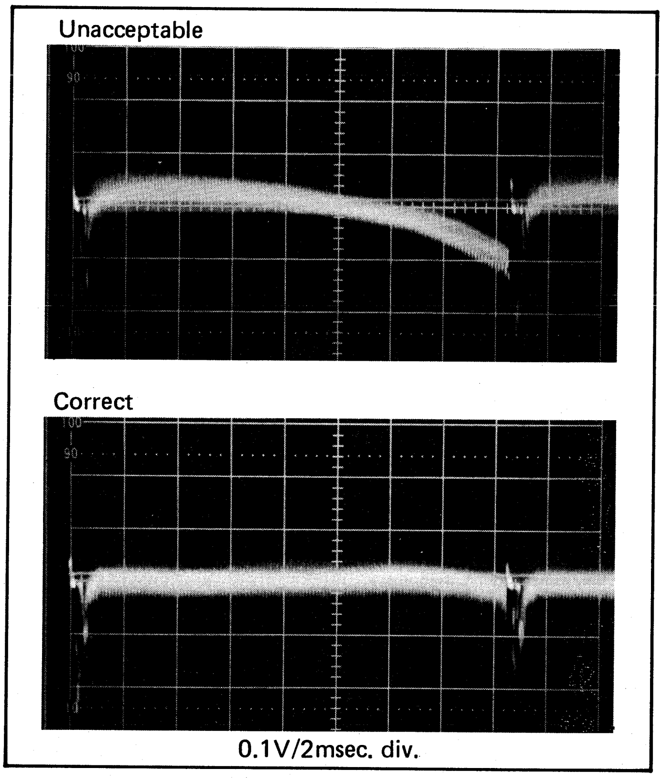


Fig. E37

4. Change to trigger to H.rate, and adjust the Color Shading (R) controls VR341 (horizontal parabola) and VR344 (horizontal sawtooth) so that the signal is minimized and flat as possible.

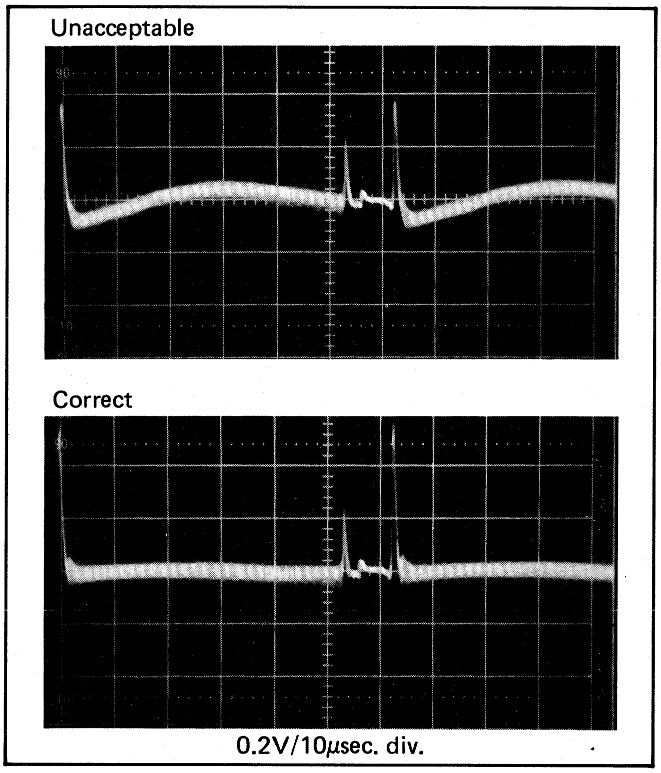


Fig. E38

5. Change to connect the scope from TP308 to TP309 (V.rate).
6. Adjust the Color Shading (B) controls VR338 (vertical sawtooth) and VR339 (vertical parabola) as same method with (R) adjustment.
7. Change to trigger to H.rate, and adjust the Color Shading (B) controls VR337 (horizontal parabola) and VR340 (horizontal sawtooth) as same method with (R) adjustment.
8. Repeat step 3, 4, 5, 6 and 7 until adjustment is best condition.

(20) RED/BLUE SIGNAL SEPARATION ADJUSTMENT

TP	ADJ.	LENS IRIS	CHART
TP306	VR325 VR327	AUTO (OPEN)	GRAY CHART
M. EQ.		SPEC.	
OSCILLOSCOPE		NOISE COMPONENT IS MINIMIZED.	

1. Set the iris control to "Auto".
2. Aim the camera at the gray scale chart.
3. Connect the oscilloscope to TP306 (H.rate).
4. Adjust the Red/Blue Separation controls VR325 and VR327 so that the noise component is minimized as possible.

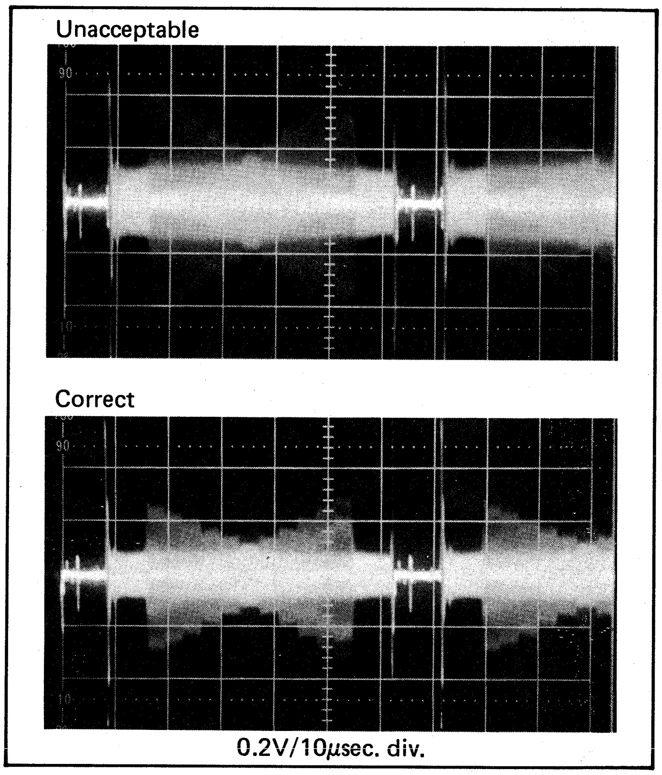


Fig. E39

(21) CHRRIER BALANCE ADJUSTMENT

TP	ADJ.	LENS IRIS	CHART
TP318	VR320 VR321	AUTO (OPEN)	WHITE CHART
M. EQ.		SPEC.	
OSCILLOSCOPE		CARRIER POINT IS CENTER	

1. Aim the camera at the gray scale chart.
2. Then, connect the vectorscope to TP318.
3. Adjust the Carrier Balance controls, VR320 and VR321 so that the carrier balance point is center on the vector screes.

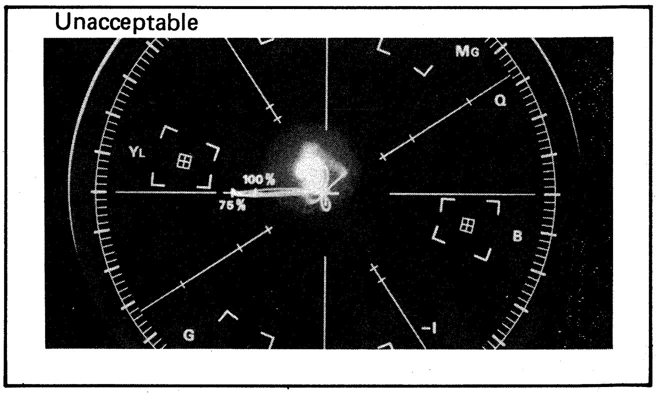


Fig. E40-A

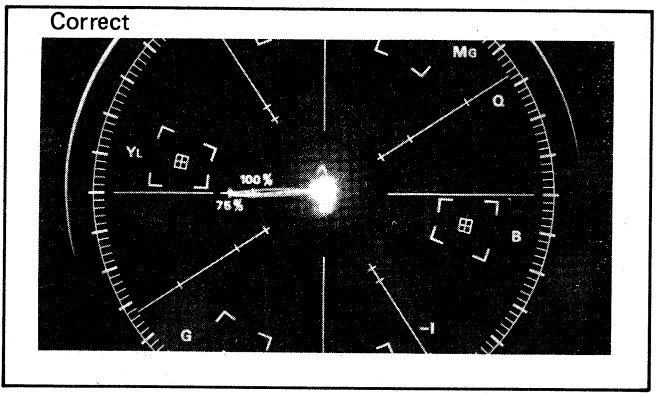

Correct

Fig. E40-B

(22) R AND B GAMMA ADJUSTMENT (WHITE BALANCE ADJUSTMENT)

TP	ADJ.	LENS IRIS	CHART
TP318	VR307(R-r1) VR310(B-r1) VR306(R-r2) VR309(R-r2) VR305(B-r3) VR303(R) VR304(B)	AUTO (OPEN)	GRAY CHART VR308(B-r3)

M. EQ.	SPEC.
OSCILLOSCOPE	MINIMUM CARRIER LEAKAGE

1. Aim the camera at the gray scale chart, and set the light intensity to 3200 degrees K.
2. Connect the oscilloscope to TP318 (H.rate).
3. Adjust the Color Gamma (R-r1) control VR307 and Color Gamma (B-r1) control VR310 until the carrier leakage from the bottom through third steps is minimized.
4. Adjust the Color Gamma (R-r2) control VR306 and Color Gamma (R-r2) control VR309 until the carrier leakage from third through fifth step from the top is minimized.

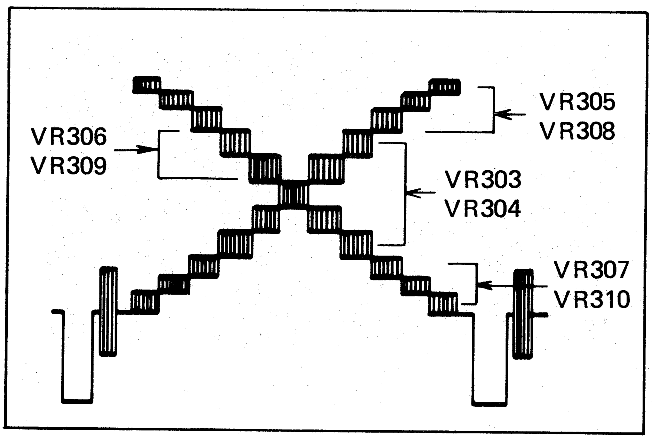
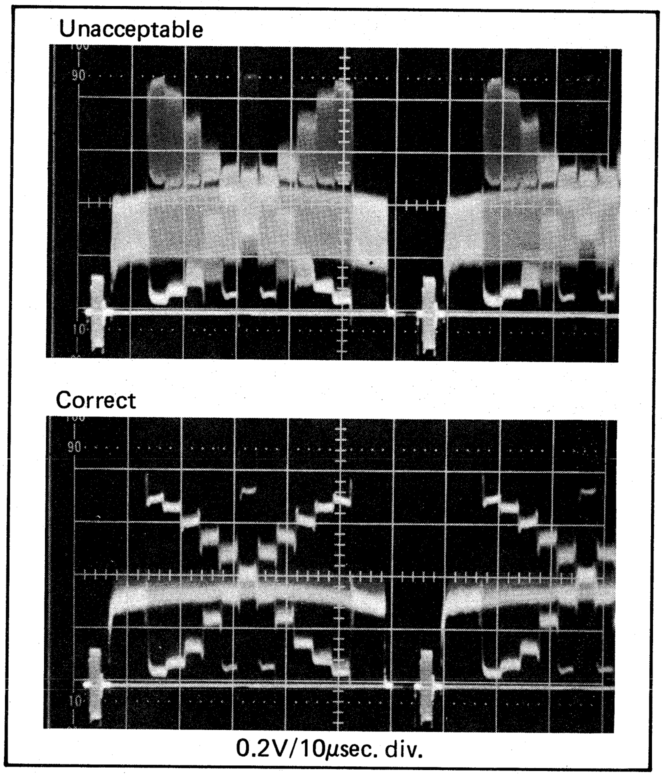


Fig. E41

5. Adjust the Color Gamma (R-r3) control VR305 and Color Gamma (B-r3) control VR308 until the carrier leakage from the first through third step from the top is minimized.
6. Adjust the Color Gamma (Red) control VR303 AND Color Gamma (Blue) Control VR304 until the carrier leakage around the center portion is minimized.
7. Repeat step 3, 4, 5 and 6 until adjustment is best condition.


Unacceptable

Correct

0.2V/10μsec. div.

Fig. E42

(23) HIGH LUMINANCE CHROMA CLIP ADJUSTMENT

TP	ADJ.	LENS IRIS	CHART
	VR316	AUTO (OPEN)	SMALL OBJECT

M. EQ.	SPEC.
TV MONITOR	GREEN PORTION IS DISAPPEARED

1. Aim the camera at a small and strong light intensity object.
2. Zoom in (close telephoto) and adjust the High Luminance Chroma Clip control VR316 so that the green portion (high Luminance portion) is disappeared, while watching the color monitor.

(24) CONFIRMATION OF NTSC PEDESTAL AND SIGNAL VOLTGAGE

Check NTSC PEDESTAL adjustment and NTSC SIGNAL LEVEL adjustment, step (11) and adjust it, if necessary.
If the adjustment is correct, go to the next step.

(25) VERTICAL EDGE GAIN ADJUSTMENT

TP	ADJ.	LENS IRIS	CHART
VIDEO OUT	VR323	AUTO (OPEN)	GRAY CHART

M. EQ.	SPEC.
TV MONITOR	COLOR ERROR IS ELIMINATED

1. Aim the camera at the gray scale chart.
2. While watching the monitor, adjust the Vertical Edge control VR323 until color error on the upper and lower edges at the gray scale is eliminated.

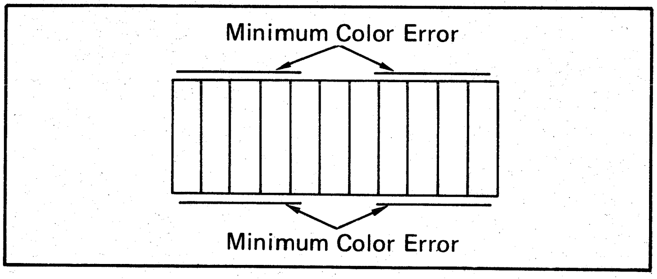


Fig. E43

(26) COLOR SHIFT COMPENSATION ADJUSTMENT

TP	ADJ.	LENS IRIS	CHART
VIDEO OUT	C213	AUTO (OPEN)	GRAY CHART

M. EQ.	SPEC.
TV MONITOR	COLOR ERROR IS ELIMINATED

1. Aim the camera at the gray scale chart.
2. While watching the monitor, adjust the Color Shift Compensation control C213 until color error of the right and left side edge at the gray scale is eliminated.

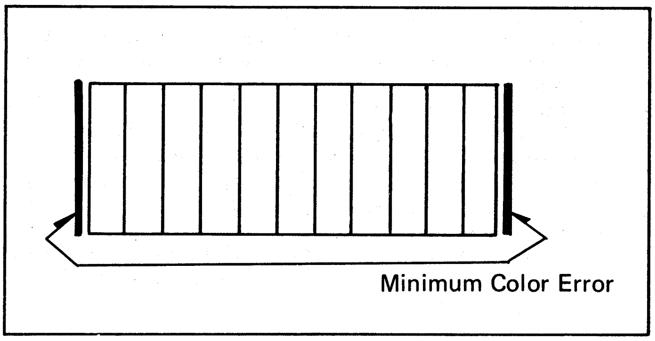


Fig. E44

(27) CARRIER PHASE ADJUSTMENT

TP	ADJ.	LENS IRIS	CHART
TP318	VR313 VR318	AUTO (OPEN)	COLOR BAR CHART

M. EQ.	SPEC.
OSCILLOSCOPE VECTORSCOPE	BURST IS MINIMIZED R-Y SIGNAL IS VERTICAL

1. Aim the camera at the color bar chart.
2. Connect a capcitor (220u/10V) between TP325 and GND.
3. Connect the scope to TP318 (H. rate) and adjust the Color Phase control VR313 so that the burst level is minimized (0mVp-p)

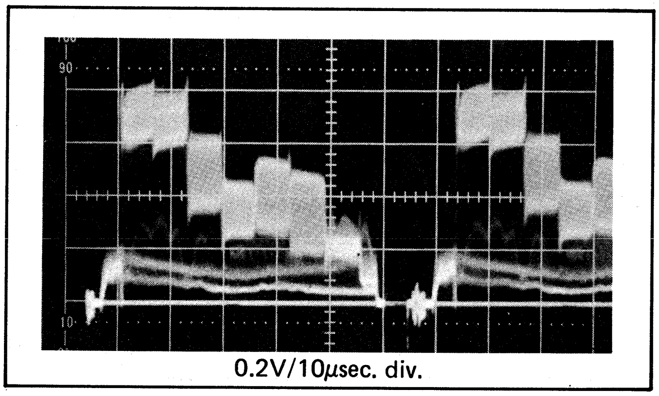


Fig. E45

4. Remove a capacitor from TP325, then connect it between TP308 and GND.
5. Connect the vector scope to TP318 and adjust the signal is horizontal.

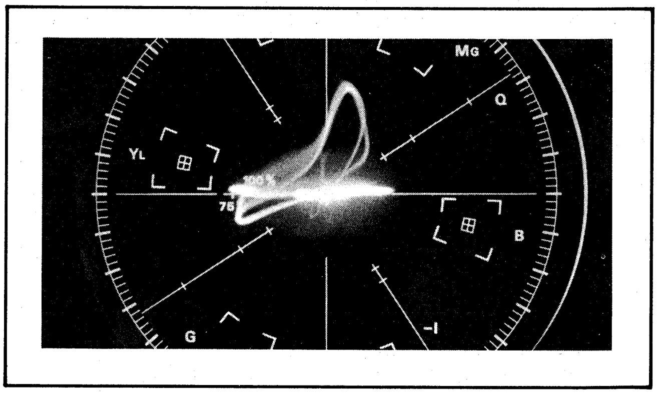


Fig. E46

6. Remove a capacitor from TP308, then connect it between TP309 and GND.
7. Adjust the R-Y phase control VR318 so that the R-Y signal on the vector scope is vertical.

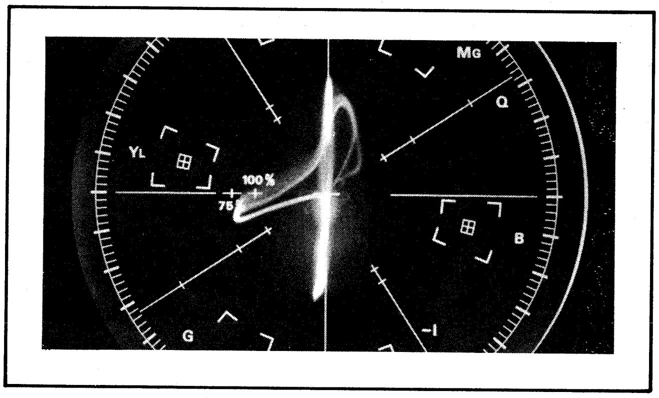


Fig. E47

8. Remove a capacitor and return the phase control on the vector scope to original position.

(28) COLOR SIGNAL ADJUSTMENT

TP	ADJ.	LENS IRIS	CHART
TP318	VR314 VR322 VR313	AUTO (OPEN)	COLOR BAR CHART
M. EQ.		SPEC.	
VECTORSCOPE		COLOR PHASE AND AMPLITUDE TO BE WITH IN SPEC.	

1. Aim the camera at the color bar chart.
2. Connect the vectorscope to TP318.
3. Set the vectorscope to "Vector" mode and observe the color vector.
4. Adjust the Color Gain control VR314, so that the amplitude of the YL signal is 1.2 times from the burst signal.
5. Adjust the Color Gain (R-Y) control VR322, so that the amplitude of the red signal is 1.5 times from the burst signal.
6. Adjust the Color Phase (RED) control VR313, so that the vector phase of the red signal is 104 degrees +- 15 degrees.
7. Adjust the total amplitude and phase of color signal by adjusting the control VR314, VR322 and VR313.
   The specification is as shown in Fig. E48

Specification:

1) PHASE

SIGNAL	VECTOR PHASE	ADJ.
RED	104° ± 15°	VR313

2) AMPLITUDE

a. YL signal is 1.2 times from the burst signal
b. Red signal is 1.5 times from the burst signal

Fig. E48

8. Turn the negative/positive reverse switch to the negative side, and check the color signal.

(29) COLOR TITLE PHASE ADJUSTMENT

TP	ADJ.	LENS IRIS	CHART
TP318	VR317	AUTO (OPEN)	WHITE CHART
M. EQ.		SPEC.	
VECTORSCOPE		PHASE IS 180° ± 10°	

1. Aim the camera at the white chart.
2. Connect the vecter scope to TP318.
3. Make yellow color title on the Monitor, and adjust the Color Title phase control VR317 so that the yellow color vecter is 180 degrees +- 10degrees.

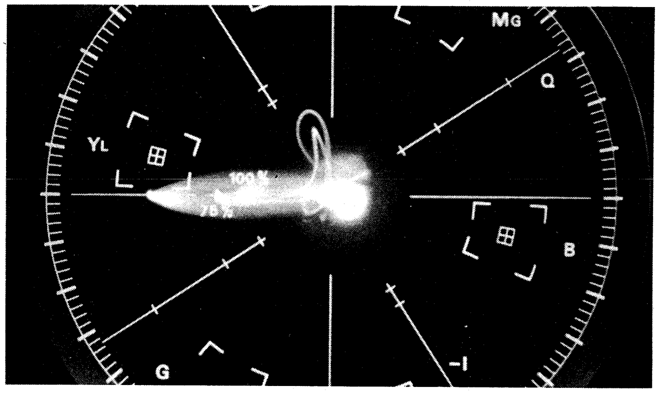


Fig. E49

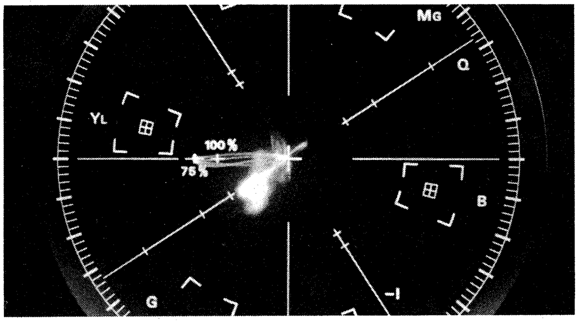
(30) AWC (AUTOMATIC WHITE BALANCE CONTROL) ADJUSTMENT

TP	ADJ.	LENS IRIS	CHART
TP318	VR350 VR351	AUTO (OPEN)	WHITE CHART
M. EQ.		SPEC.	
VECTORSCOPE		WHITE POINT IS CENTER OF SCOPE	

1. Aim the camera at the white chart.
2. Set the AWB Select switch to the full auto position momentary and return to the AWB position.
3. Confirm the view minder display so that AWB is flashing "PUSH".
4. Connect the vectorscope to TP318, and then set the vectorscope to the "Vector" mode.
5. Then, press the WB button.
6. Observe the signal on the vectorscope screen, and adjust the Automatic White Balance controls VR350 and VR351 so that the white balance point is center of the vectorscope screen.
7. Then, press the WB button check the view minder display so that AWB grows "OK".

8. Set the color temperature correction switch to the outdoor position (mark:sun) and press the WB button.
9. Confirm the view minder display so that AWB grows "BLUE" or "RED".

Unacceptable Adj.



Correct Adj.

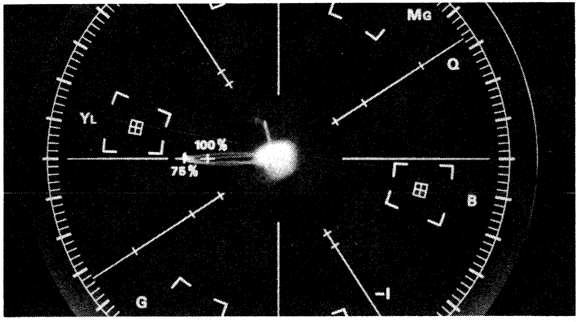


Fig. E50

(31) FULL AUTOMATIC WHITE BALANCE CONTROL ADJUSTMENT

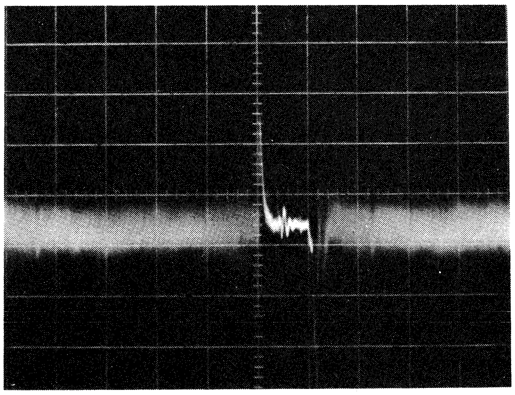
TP	ADJ.	LENS IRIS	CHART
TP318	VR348 VR349	AUTO (OPEN)	WHITE CHART
M. EQ.		SPEC.	
VECTORSCOPE		WHITE POINT IS CENTER OF SCOPE	

1. Set the AWB select switch to the full auto position.
2. Aim the camera at the white chart.
3. Connect the vectorscope to TP318 and set the vectorscope to the "Vector" mode.
4. Then, adjust the Full Automatic AWB controls VR348 and VR349 so that the white balance point is center of the vectorscope screen.

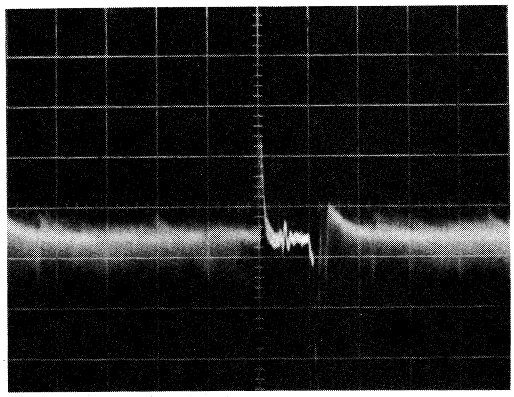
(32) LOW CHROMA SATURATION CLIP ADJUSTMENT

TP	ADJ.	LENS IRIS	CHART
PIN 26 OF IC302	VR315	AUTO (OPEN)	GRAY CHART
M. EQ.		SPEC.	
OSILLOSCOPE		FIG. E51	

1. Aim the camera at the gray scale chart.
2. Adjust the Red and Blue Gain controls on the rear panel so that the white portion at center of gray chart is white color.
3. Connect the oscilloscope to pin 26 of IC302.
4. Adjust the Lor Chroma Saturation Clip control VR315 until the clipped line appears on the waveform as shown in Fig. E51.



(a) Before Adjustment



(b) After Adjustment

Fig. E51

5. Aim the camera at the other object, and confirm that the low chroma saturation clip is correct.

ELECTRONIC VIEWFINDER CIRCUIT

PREPARATIONS:

Connect the viewfinder connector to the EVF connector on the camera head.

(1) H-OSC ADJUSTMENT

TP	ADJ.	LENS IRIS	CHART
PIN 15 OF B703	VR9001	AUTO (OPEN)	OBJECT
M. EQ.		SPEC.	
OSCILLOSCOPE		VOLTAGE OF STEP 3 PLUS 1.0 + 0.1V – 0V	

1. Aim the camera at the object.
2. Connect the jumpers between pin 6 of connector B340 and GND, and pin 14 of connector B340 and GND.
3. Connect the scope to pin 15 of connector B703 (H.rate), and read the voltage range of signal level and memorize it.
4. Remove the jumpers from pin 6 and pin 14 of connector B340, and adjust the H-OSC control VR9001 so that the voltage at pin 15 of connector B703 is equal to the voltage that is memorized in step 3 plus 1.0V + 0.1V - 0V.

(2) FOCUS ADJUSTMENT

TP	ADJ.	LENS IRIS	CHART
VIDEO OUT	VR903	AUTO (OPEN)	REGISTRATION CHART
M. EQ.		SPEC.	
TV MONITOR		BEST FOCUS	

1. Aim the camera at the registration chart.
2. If the focus on viewfinder is improper but the picture on the monitor is OK, adjust the Focus control VR903.

(3) HORIZONTAL AND VERTICAL CENTERING ADJUSTMENT

TP	ADJ.	LENS IRIS	CHART
VIDEO OUT	CENTERING COILS	AUTO (OPEN)	RESISTRATION CHART
M. EQ.		SPEC.	
TV MONITOR		PICTURE IS PROPERLY POSITIONED.	

1. Aim the camera at the registration chart.
2. Adjust the Centering Coil Assembly so that the picture is properly positioned both horizontally and vertically.

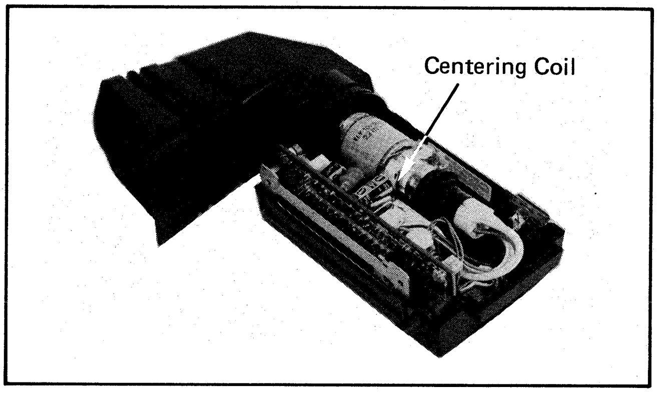


Fig. E52

(4) HORIZONTAL AMPLITUDE ADJUSTMENT

TP	ADJ.	LENS IRIS	CHART
VIDEO OUT	L904	AUTO (OPEN)	GRAY CHART
M. EQ.		SPEC.	
TV MONITOR		PICTURE IS SAME AS PICTURE ON TV MONITOR.	

1. Aim the camera at the gray scale chart.
2. Adjust the Horizontal Amplitude control L904 so that the picture on the EVF is the same as the picture on the TV monitor.

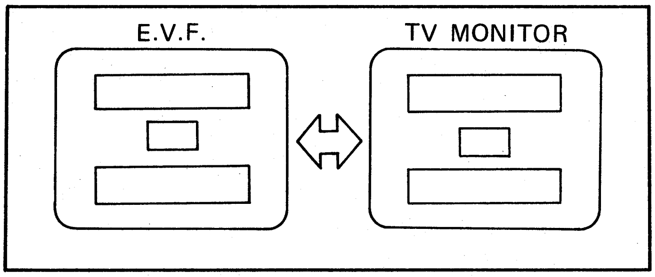


Fig. E53

(5) VERTICAL AMPLITUDE ADJUSTMENT

TP	ADJ.	LENS IRIS	CHART
VIDEO OUT	VR9003	AUTO (OPEN)	GRAY CHART
M. EQ.		SPEC.	
TV MONITOR		VERTICAL AMPLITUDE IS CORRECT	

1. Aim the camera at the gray scale chart.
2. Adjust the Vertical Amplitude control VR9003 so that the vertical amplitude is correct, while watching the monitor.

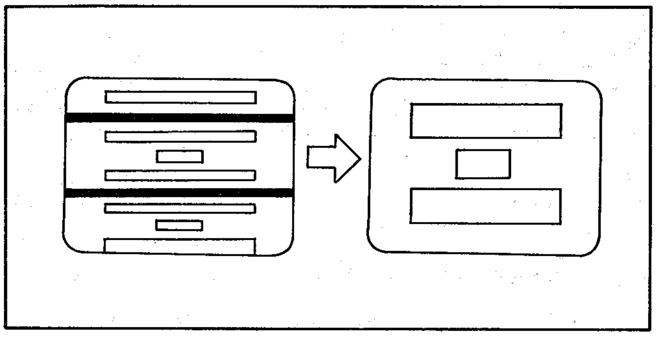


Fig. E54

(6) IRIS INDICATOR ADJUSTMENT

TP	ADJ.	LENS IRIS	CHART
VIDEO OUT	VR9002	AUTO (OPEN)	GRAY CHART
M. EQ.		SPEC.	
CRT OF EVF		IRIS BAR IS CENTER OF CRT	

1. Aim the camera at the gray scale chart. Set the light intensity to more than 1000 lux.
2. Set the iris control switch to auto.
3. Adjust the Iris Indicator control VR9002 so that the iris indicator is center position.

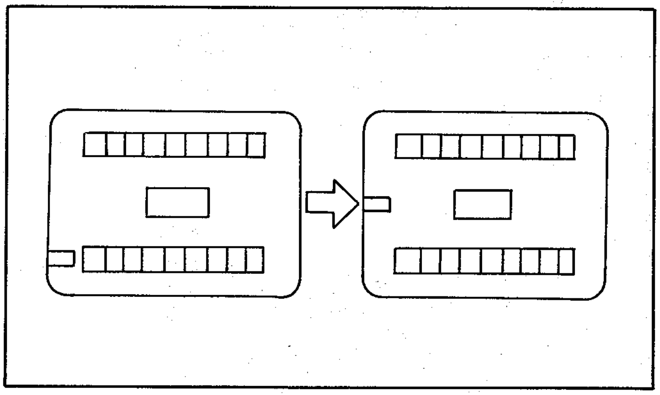


Fig. E55

(7) BRIGHT ADJUSTMENT

TP	ADJ.	LENS IRIS	CHART
VIDEO OUT	VR902	AUTO (OPEN)	GRAY CHART
M. EQ.		SPEC.	
CRT OF EVF		PICTURE IS PROPER CONDITION	

1. Aim the camera at the gray scale chart.
2. Adjust the Bright control VR902 so that the picture on the EVF is proper condition.

CAMERA REMOTE CONTROL CIRCUIT

(1) SYSTEM CLOCK ADJUSTMENT

TP	ADJ.	LENS IRIS	CHART
TP702 TP612	VR701 VR706		
M. EQ.		SPEC.	
FREQUENCY COUNTER		255KHz ± 5KHz 250KHz ± 10KHz	

1. Connect the frequency counter to TP702.
2. Adjust the System Clock 1 control VR701 so that the frequency is 255KHz +- 5KHz.
3. Connect the frequency counter to TP612.
4. Adjust the System Clock 2 control VR706 so that the frequency is 250KHz +- 10KHz.

(2) CRYSTAL OSCILLATION FREQUENCY ADJUSTMENT

TP	ADJ.	LENS IRIS	CHART
TP701	C706		
M. EQ.		SPEC.	
FREQUENCY COUNTER		32.768KHz ± 1KHz	

1. Connect the frequency counter to TP701.
2. Adjust the Crystal OSC control C706 so that the frequency at TP701 is 32.768KHz +- 1KHz.

(3) DISPLAY POSITION ADJUSTMENT

TP	ADJ.	LENS IRIS	CHART
VIDEO OUT	VR703 VR702		
M. EQ.		SPEC.	
TV MONITOR		FIG. E56 FIG. E57	

1. Connect the camera with VCR (FP, FQ or FE series).
2. Turn the power switch on. Set the VCR/CAMERA switch to the CAMERA position.

3. Adjust the Display Position 1 control VR703 so that the distance between A period and B period is equaled as shown in Fig. E56.

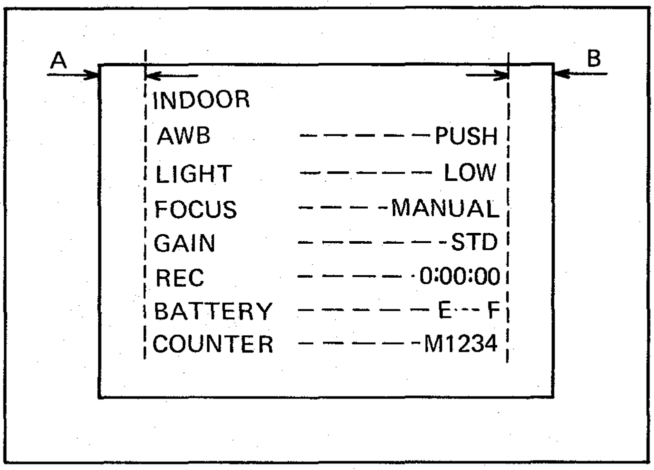

A
B
INDOOR
AWB ------PUSH
LIGHT ------ LOW
FOCUS ----MANUAL
GAIN -------STD
REC ----- 0:00:00
BATTERY ------ E---F
COUNTER -----M1234

Fig. E56

4. Adjust the Display Position 2 control VR702 so that the positions that the left side of the battery remaining indication and the counter number indication are equaled as below.

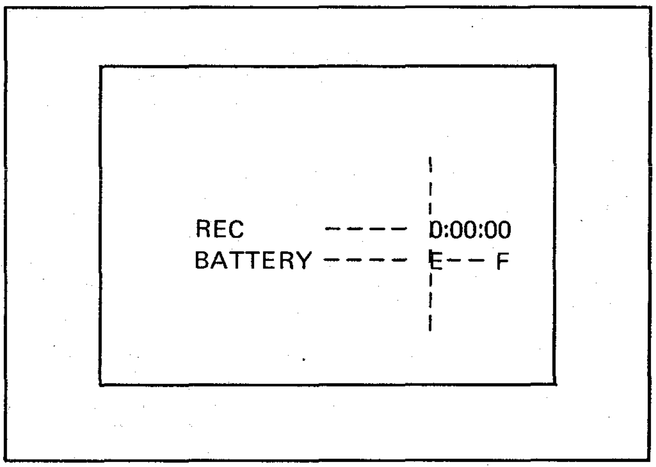

REC ---- 0:00:00
BATTERY ---- E-- F

Fig. E57

AUTO FOCUS LENS ADJUSTMENT PROCEDURES

PREPARATIONS:

Auto Focus Servicing Tools List

Auto Focus Jigs Set	29-1713-84
Precision Driver	29-1714-84
Diffusion Cap	29-1715-84
Infrared Ray Detect Camera	29-1716-84
Auto Focus Lens Adjustment Driver	29-1717-84
Infrared Ray Position Chart (2)	29-1720-84
Gray Chart	29-1721-84

(1) REMOVAL OF AUTO FOCUS LENS SIDE COVER

1. Move the shoulder slide to the rear. Then, press the portion (A) and move the shoulder slide to the rear as shown in Fig. A1-(a).
   Unscrew 2 screws (B) (see Fig. A1-(b)).
2. Then, unscrew 2 screws (rear side) and remove the left and right side cover. (refer to section "Disassembly Method).
3. Unscrew 2 screws (C) (see Fig. A2).
4. Unscrew 3 screws (D) and remove the shoulder assembly from the camera head (see Fig. A1-(b)).
5. Unscrew 6 screws and remove both AF side covers (refer to section "Replacement of the Power Zoom Lens").

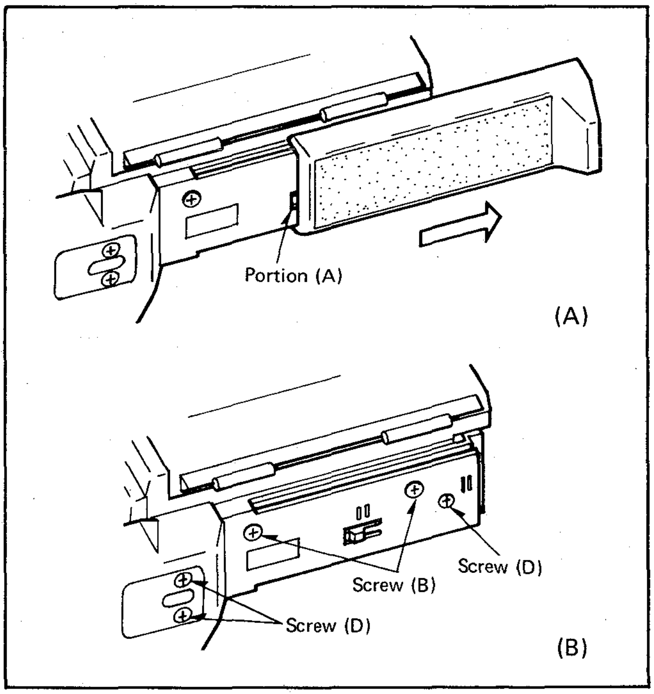

Portion (A)
(A)
Screw (B)
Screw (D)
Screw (D)
(B)

Fig. A1

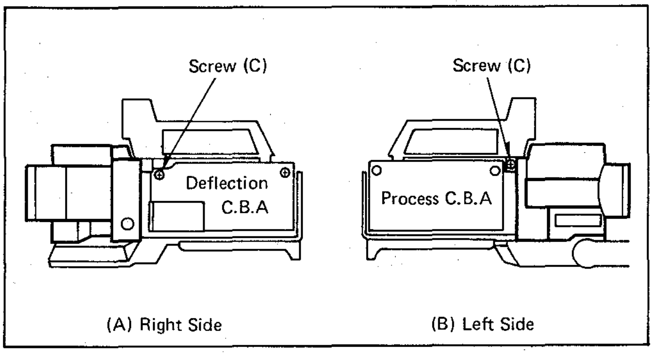

Screw (C)
Screw (C)
Deflection C.B.A
Process C.B.A
(A) Right Side
(B) Left Side

Fig. A2

(2) INFRARED LIGHT EMITTING DIODE (IR-LED) POSITION ADJUSTMENT

TP	ADJ.	LENS IRIS	CHART
VIDEO OUT	LED (H AND V) POSITION	AUTO (OPEN)	INFRARED RAY POSITION CHART
M. EQ.		SPEC.	
TV MONITOR		INFRARED RAY IS CENTER OF CHART	

Note:

We recommend that infrared light emitting diode position adjustment is performed in the dark room.

1. Set the camera and the infrared ray position chart as follows.

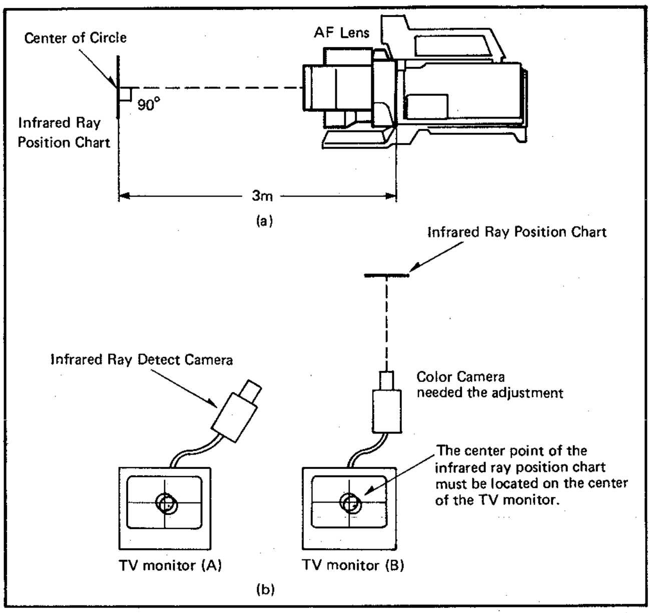
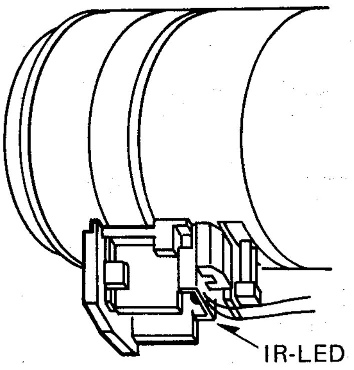

Center of Circle
AF Lens
90°
Infrared Ray Position Chart
3m
(a)
Infrared Ray Position Chart
Infrared Ray Detect Camera
Color Camera needed the adjustment
The center point of the infrared ray position chart must be located on the center of the TV monitor.
TV monitor (A)
TV monitor (B)
(b)

Fig. A3

2. Aim the camera at the infrared ray position chart and observe the picture on the TV monitor (B).
   The center point of the infrared ray position chart must be located on the center of the TV monitor screen.
3. Then, aim the infraed ray detect camera at the infrared ray position chart and observe the picture on the TV monitor (A). See section for conversion of the camera to infrared reception.
4. And adjust the LED Horizontal Position Screw and LED LED Vertical Position Screw so that the infrared ray hits the circle (110) as shown in Fig. A3-(B) TV monitor(A).
   (Irradiated position is less than the circle (110).



This LED is fixed by the adhesive agent.

(3) SILICON PHOTO DIODE (SPD) POSITION ADJUSTMENT

TP	ADJ.	LENS IRIS	CHART
PIN 9 AND PIN 32 OF HIC6552	VR5102 VR5103	AUTO (OPEN)	INFRARED RAY POSITION CHART
M. EQ.		SPEC.	
OSCILLOSCOPE		2.7V ± 50mVp-p (A+B) 2.7V ± 20mVp-p (A–B)	

1. Aim the camera at infrared ray position chart after fix the distance between chart and camera is 6 feet (3m).
2. Connect lead wires to pin 9, 10, 11, and 32 of HIC6552 on Auto Focus (A) Circuit Board. (Refer to Fig. A5.)

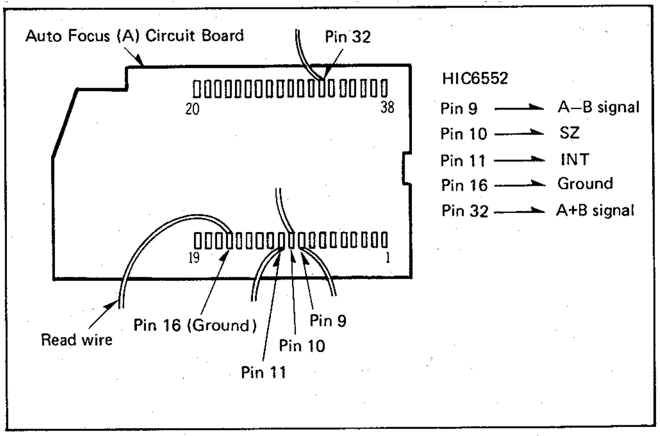

Auto Focus (A) Circuit Board
Pin 32
20
38
19
1
HIC6552
Pin 9 → A–B signal
Pin 10 → SZ
Pin 11 → INT
Pin 16 → Ground
Pin 32 → A+B signal
Read wire
Pin 16 (Ground)
Pin 9
Pin 10
Pin 11

Fig. A5

3. Cover the distance detection window (receiver side) with thick black paper as shown in Fig. A6.

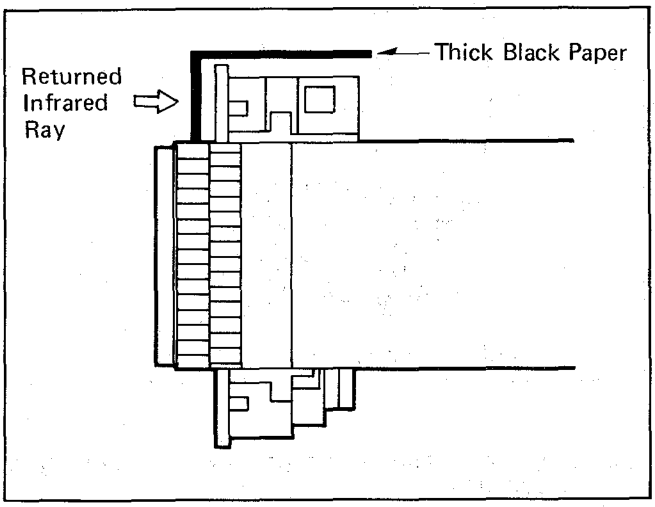

Thick Black Paper
Returned Infrared Ray

Fig. A6

4. Connect a jumper between pin 11 of HIC6552 and GND.
Trigger the oscilloscope with pin 10 of HIC6552 (SZ), connect the oscilloscope CH1 to pin 32 of HIC6552 (A+B signal) and CH2 to pin 9 of HIC6552 (A-B signal) and observe the waveform.

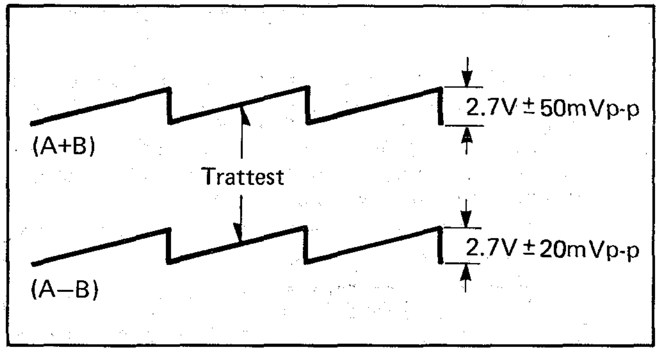

2.7V ± 50mVp-p
(A+B)
Trattest
2.7V ± 20mVp-p
(A–B)

Fig. A7

5. Then, adjust the Offset (A+B) control VR5102 so that the waveform level is 2.7V +- 50mVp-p. Adjust the Offset (A-B) control VR5103 so that the waveform level is 2.7V +- 20mVp-p as shown in Fig. A7.

(4) SILICON PHOTO DIODE (SPD) VERTICAL POSITION ADJUSTMENT

TP	ADJ.	LENS IRIS	CHART
PIN 32 OF HIC6552	VR5104 VR5105	AUTO (OPEN)	GRAY CHART
M. EQ.		SPEC.	
OSCILLOSCOPE		PRIOD (A) IS MINIMIZED	

1. Connect a jumper between pin 11 of HIC 6552 and GND.
2. Aim the camera at the gray chart as shown in Fig. A8.

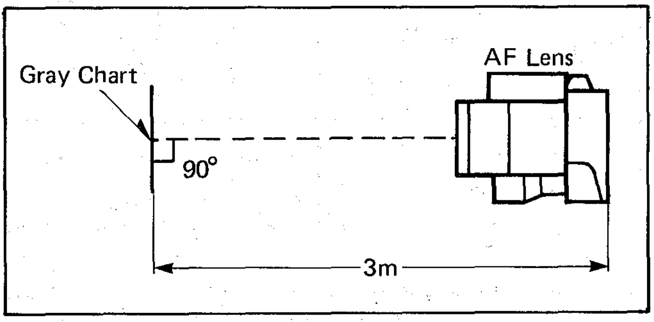

Gray Chart
AF Lens
90°
3m

Fig. A8

3. Confirm that the focus ring indicates 3 meters. If the focus ring doesn't indicate 3 meters, adjust the SPD Vertical Position screw as shown in Fig. A9.
(Preadjustment)

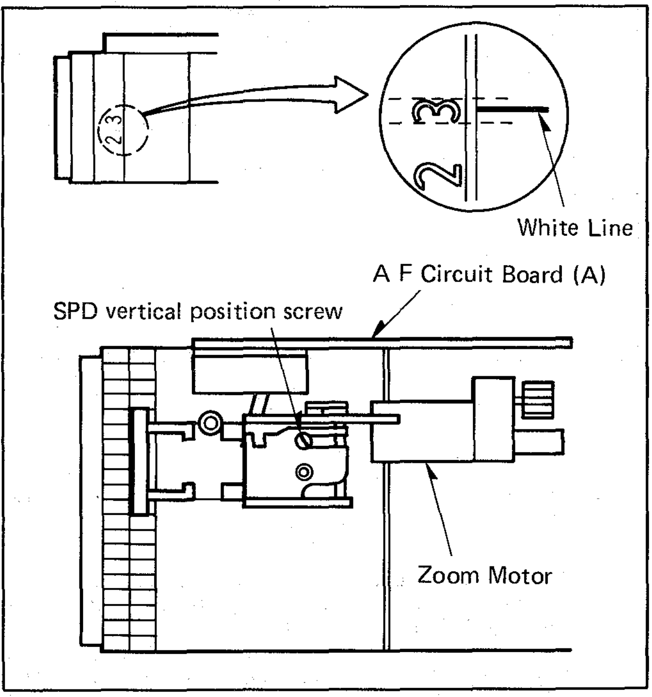

White Line
A F Circuit Board (A)
SPD vertical position screw
Zoom Motor

Fig. A9

4. Connect the oscilloscope to pin 32 of HIC6552 (A+B signal).
Trigger the oscilloscope with pin 10 of HIC6552(SZ)
5. Adjust the A+B Gain control VR5104 so that the period (A) on the waveform is minimized as shown in Fig. A10.
6. Change to connect the scope from pin 32 of HIC 6552 to pin 9 of HIC 6552, and adjust the A-B Gain control VR5105 as same method with A+B Gain adjustment.

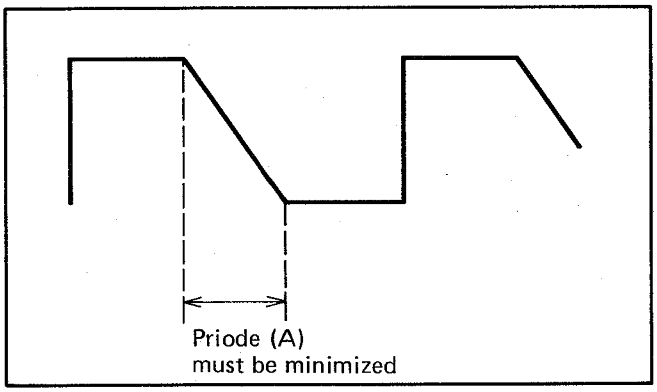

Priode (A)
must be minimized

Fig. A10

(5) CONFIRMATION OF OFFSET ADJUSTMENT
Check the OFFSET adjustment and adjust it, if necessary.

(6) SILICON PHOTO DIODE (SPD) HORIZONTAL POSITION ADJUSTMENT

TP	ADJ.	LENS IRIS	CHART
PIN 32 OF HIC6552	SPD (H) SCREW	AUTO (OPEN)	GRAY CHART
M. EQ		SPEC.	
OSCILLOSCOPE		PRIOD (A) IS MINIMIZED	

1. Connect a jumper between pin 11 of HIC 6552 and GND.
2. Aim the camera at the Gray Chart.
3. Then, adjust the SPD Vertical Position Screw so that the focus ring indicates the 3 meter position, manually rotate the focus ring and confirm that it returns back to the 3 meter position from the infinity side and near side as shown in Fig. A9.

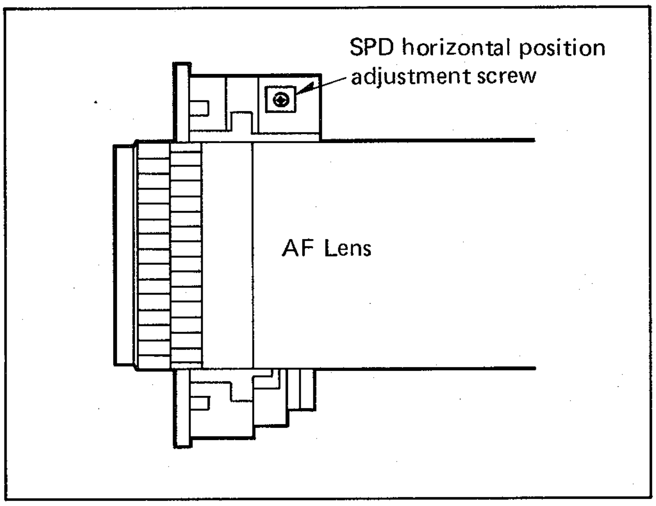

SPD horizontal position adjustment screw
AF Lens

Fig. A11

4. Connect the oscilloscope to pin 32 of HIC6552, trigger the oscilloscope with pin 10 of HIC6552 and observe the waveform. (Fig. A12)
5. Adjust the SPD Horizontal Position Screw so that the period (A) on the waveform is minimized as shown in Fig. A12.

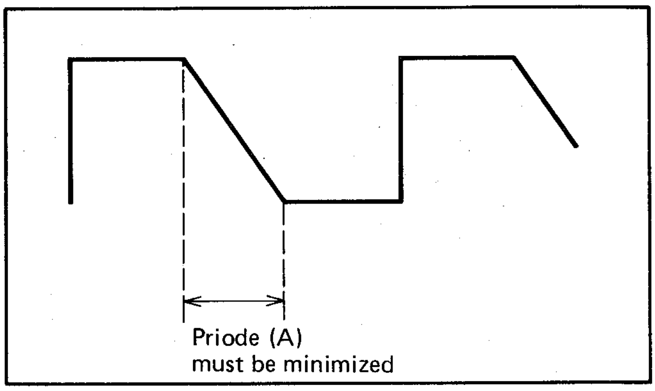

Priode (A)
must be minimized

Fig. A12

6. Cement the horizontal position screw with an adhesive.

(7) HUNTING ADJUSTMENT

TP	ADJ.	LENS IRIS	CHART
	VR5101	AUTO (OPEN)	INFRARED RAY POSITION CHART
M. EQ.		SPEC.	
		HUNTING IS STOPPED	

1. Set the camera and the infrared ray position chart as shown in Fig. A3.
2. Disconnect the lead wire between pin 11 of HIC6552 and pin 16.
3. Confirmation:
If the focus ring is fully turned to both infinity and close up by hand and released, the focus ring must indicate the 3 meter position +- 1mm as shown below. If the focus ring doesn't indicate properly, adjust the A+B Gain control VR5104 and A-B Gain control VR5105.

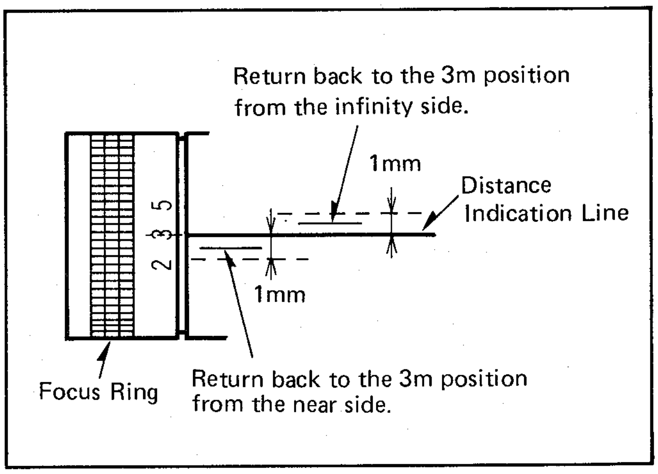
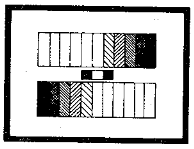

Return back to the 3m position from the infinity side.
1mm
Distance Indication Line
2 3 5
1mm
Focus Ring
Return back to the 3m position from the near side.

Fig. A13

4. If hunting doesn't stop, adjust the Hunting control VR5101.
Clockwise:
D.B.(Dead Band)width increase
Counterclockwise:
D.B.(Dead Band) width decrease

COLOR CAMERA SERVICING FIXTURES

VFKS002
LIGHT BOX W/CHART SET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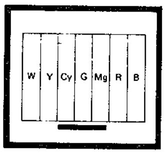
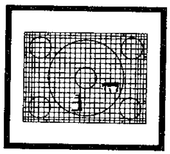
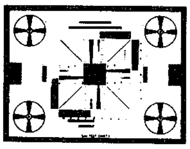


②


③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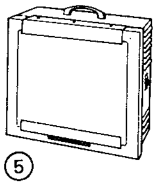
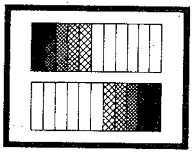

⑤

①	VFKS002A	Gray Scale Chart
②	VFKS002B	Color Chart
③	VFKS002C	Registration Chart
④	VFKS002D	Resolution Chart
⑤	VFKS002Y	Light Box

VFKS003
REFLECTION CHART SET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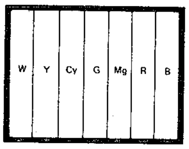

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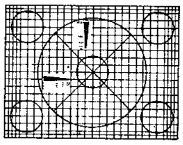
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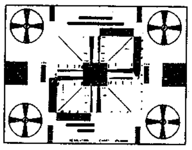
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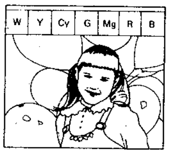
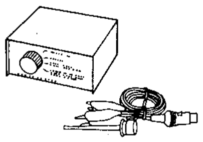


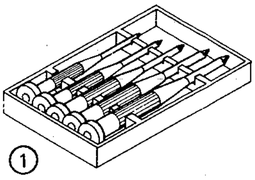
⑤

①	VFKS003A	Gray Scale Chart
②	VFKS003B	Color Chart
③	VFKS003C	Registration Chart
④	VFKS003D	Resolution Chart
⑤	VFKS003E	Color Sheet

VFKS001C
FM DETECTOR



VFKW0006
AUTO FOCUS JIGS SET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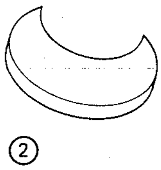
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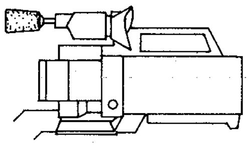
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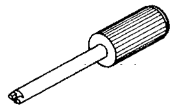
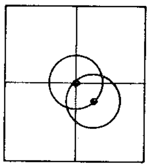
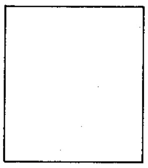

④

①	VFKW0006A	Precision Driver
②	VFKW0006B	Diffusion Cap
③	VFKW0006C	Infrared Ray Detect Camera
④	VFKW0006D	Adjustment Driver


VFKW0008
Infrared Ray Position Chart(II)


VFKW0009
Gray Chart

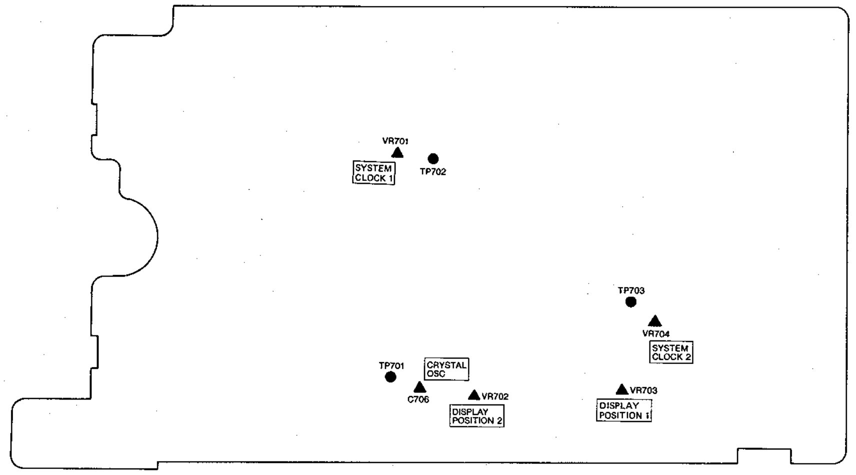
THE OTHER EQUIPMENT

1. 3200° K Studio Light (See your local photo supply dealer): Minimum requirement is 2 flood lights about 350-500 watts each.
2. Luxmeter
   We recommend one of the following:
   A. Portable luxmeter Model No. 3281 by Yokogawa
      Yokogawa Corporation of America
      2 Dart Road Shenandoah, GA 30265
   B. Electronic Foot Candle Meter by Panlux
      Berkey Marketing Company
      25-30 Brooklyn Queens Expressway Woodside,
      New York 11377
3. FM Detector
   Part No. ——— VFKS001C
4. Oscilloscope
   Dual Trace, 25MHz, 2mV/DIV.
   Minimum Sensitivity with Delay Mode.
5. Vector Scope
6. VTVM or Digital Voltmeter
7. Tripod
8. Frequency Counter
9. Hex Wrench (1.5mm/7mm).
10. Extention Cable (VFKW0026)

Location of Test Points and Controls

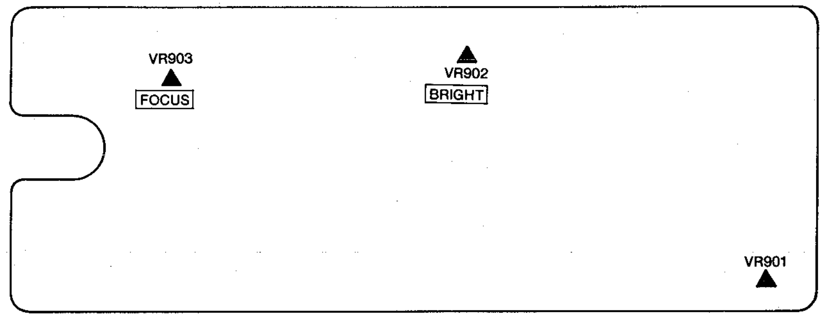
Microprocessor P.C.B. (Right side of the camera when viewed from front)

VEPW0421


VR701
SYSTEM CLOCK 1
TP702
TP703
VR704
SYSTEM CLOCK 2
TP701
CRYSTAL OSC
C706
VR702
DISPLAY POSITION 2
VR703
DISPLAY POSITION 1

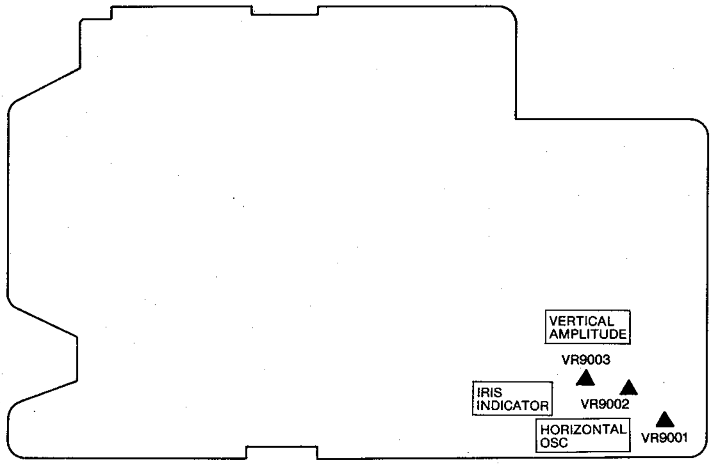
E.V.F. P.C.B.

VEPW0266B


VR903
FOCUS
VR902
BRIGHT
VR901

E.V.F. Relay P.C.B.

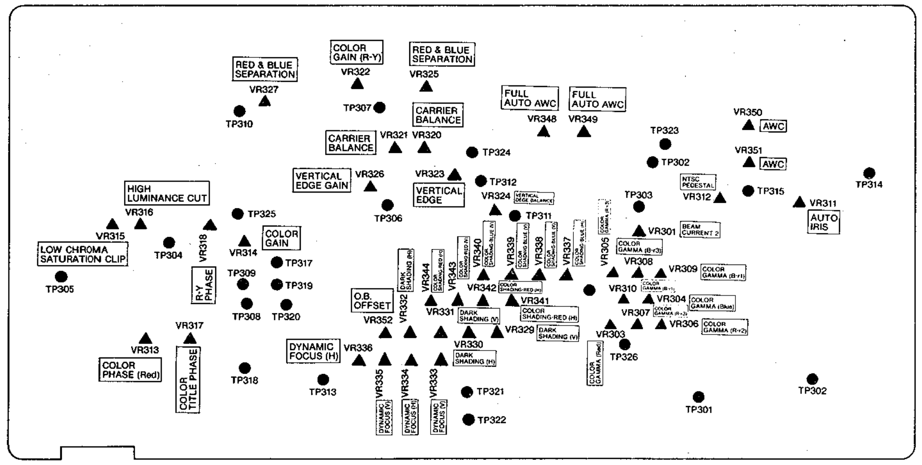
VEPW0423


VERTICAL AMPLITUDE
VR9003
IRIS INDICATOR
VR9002
HORIZONTAL OSC
VR9001

Location of Test Points and Controls

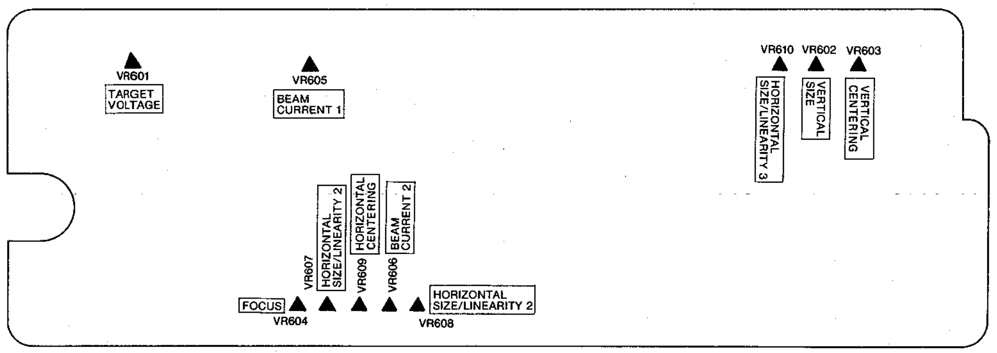
Process P.C.B. (Left side of the camera when viewed from the front)

VEPW0418

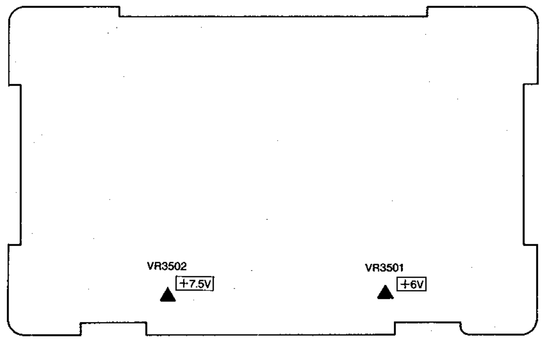

RED & BLUE SEPARATION
VR327
TP310
COLOR GAIN (R-Y)
VR322
TP307
RED & BLUE SEPARATION
VR325
CARRIER BALANCE
CARRIER BALANCE
VR321
VR320
FULL AUTO AWC
FULL AUTO AWC
VR348
VR349
TP324
VERTICAL EDGE GAIN
VR326
TP306
VR323
VERTICAL EDGE
TP312
VR324
VERTICAL EDGE BALANCE
TP311
TP323
TP302
VR350
AWC
VR351
AWC
NTSC PEDESTAL
VR312
TP303
TP315
VR311
AUTO IRIS
TP314
HIGH LUMINANCE CUT
VR316
VR315
LOW CHROMA SATURATION CLIP
TP305
TP304
VR318
R-Y PHASE
TP325
VR314
COLOR GAIN
TP317
TP309
TP319
TP308
TP320
VR317
COLOR TITLE PHASE
VR313
COLOR PHASE (Red)
TP318
O.B. OFFSET
VR352
VR332
DARK SHADING (H)
VR344
COLOR SHADING-RED (H)
VR343
COLOR SHADING-RED (V)
VR340
COLOR SHADING-BLUE (V)
VR339
COLOR SHADING-BLUE (V)
VR338
COLOR SHADING-BLUE (V)
VR337
COLOR SHADING-BLUE (H)
VR342
COLOR SHADING-RED (H)
VR341
COLOR SHADING-RED (H)
VR331
DARK SHADING (V)
VR329
DARK SHADING (V)
VR330
DARK SHADING (H)
DYNAMIC FOCUS (H)
VR336
TP313
VR335
DYNAMIC FOCUS (V)
VR334
DYNAMIC FOCUS (H)
VR333
DYNAMIC FOCUS (V)
TP321
TP322
VR305
COLOR GAMMA (R-r3)
VR301
BEAM CURRENT 2
COLOR GAMMA (B-r3)
VR308
VR309
COLOR GAMMA (B-r1)
VR310
COLOR GAMMA (B-r1)
VR304
COLOR GAMMA (Blue)
VR307
COLOR GAMMA (R-r3)
VR306
COLOR GAMMA (R-r2)
VR303
COLOR GAMMA (Red)
TP326
TP301
TP302

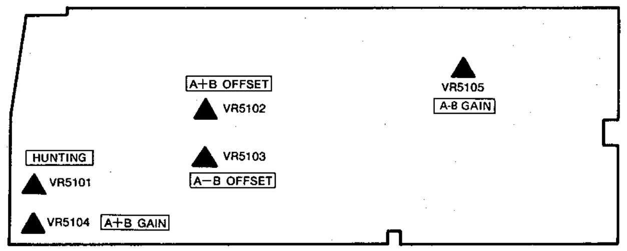
Deflection P.C.B. (Under side of camera)

VEPW0420


VR601
TARGET VOLTAGE
VR605
BEAM CURRENT 1
VR610
VR602
VR603
HORIZONTAL SIZE/LINEARITY 3
VERTICAL SIZE
VERTICAL CENTERING
VR607
HORIZONTAL SIZE/LINEARITY 2
VR609
HORIZONTAL CENTERING
VR606
BEAM CURRENT 2
FOCUS
VR604
HORIZONTAL SIZE/LINEARITY 2
VR608

Power Supply P.C.B.	Auto Focus (A) P.C.B.
VEPW0419	VEPW0361


VR3502
+7.5V
VR3501
+6V


A+B OFFSET
VR5102
VR5105
A-B GAIN
HUNTING
VR5101
VR5103
A−B OFFSET
VR5104
A+B GAIN

SECTION 3

Block Diagrams
Schematic Diagrams
Printed Circuit
Board Diagrams

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AUDIO CIRCUIT BOARD (VEPW0422) 3-16
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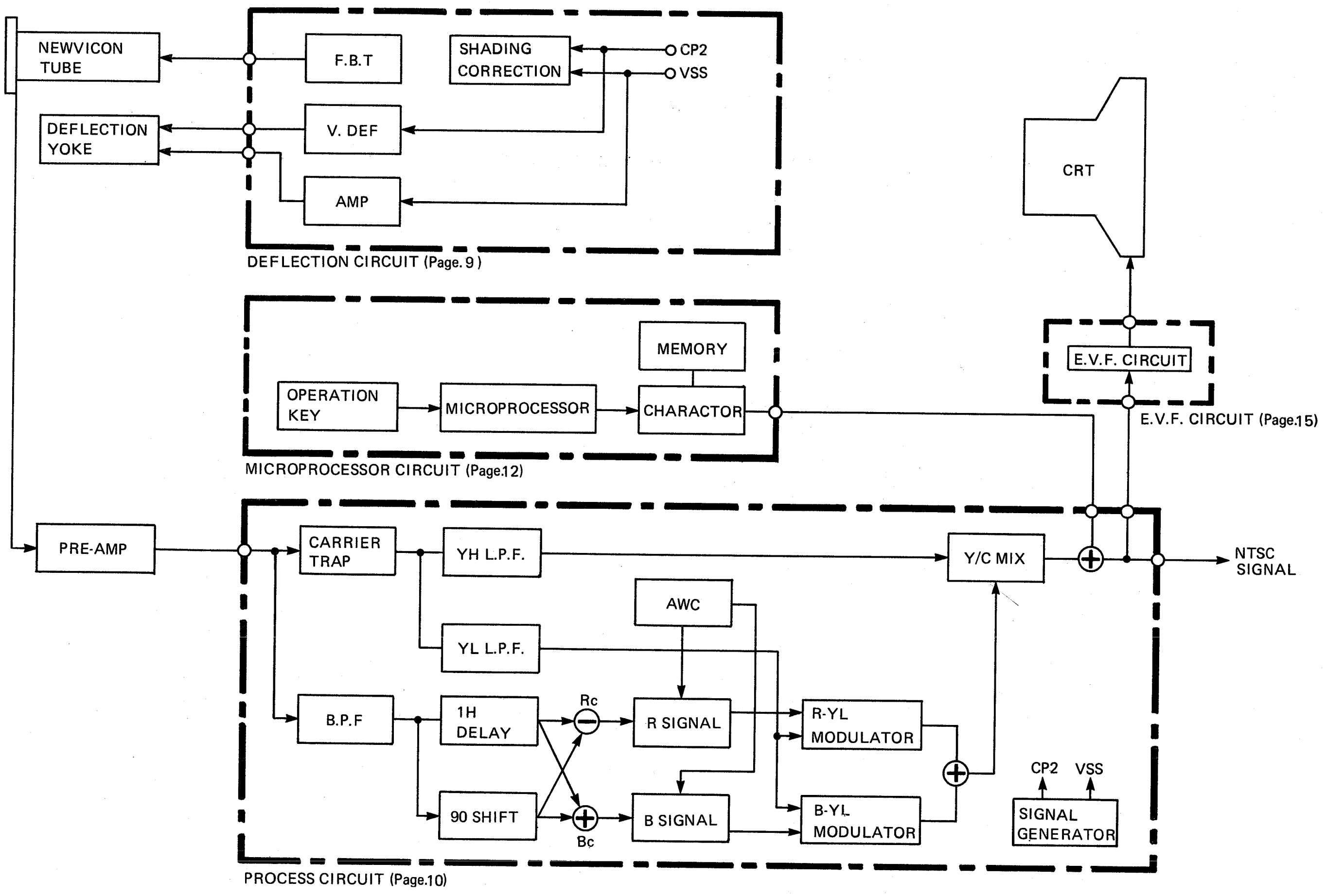
AUTO FOCUS (B) CIRCUIT BOARD 3-18

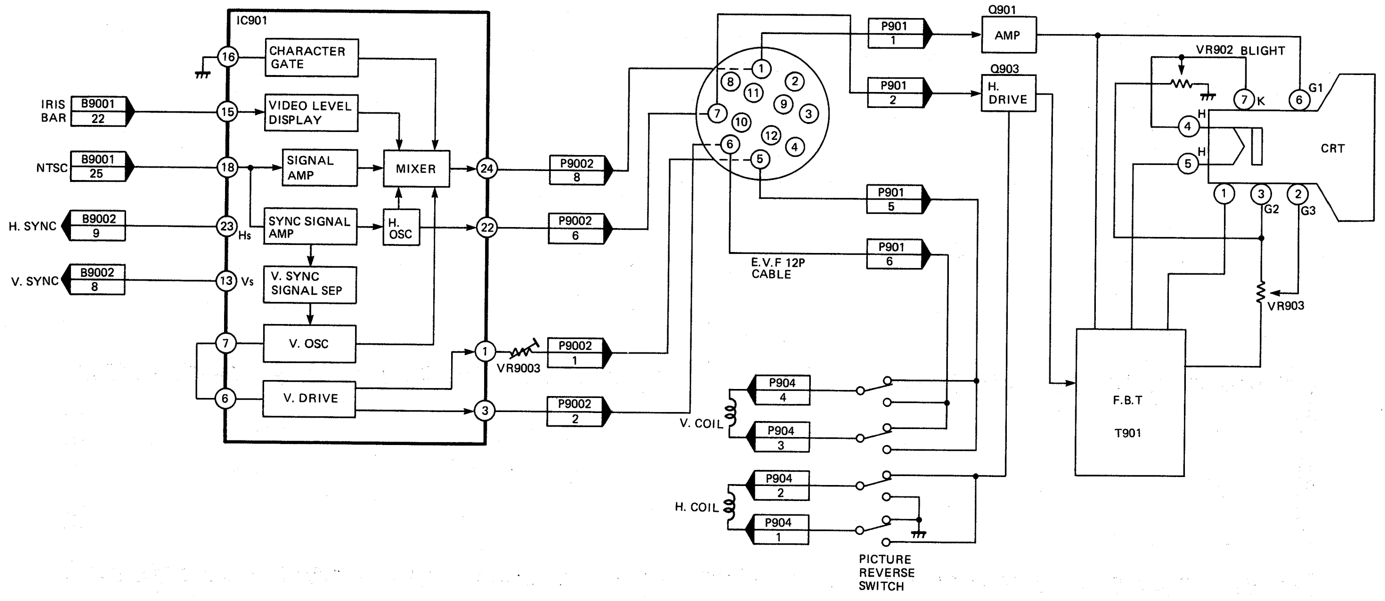
IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are shaded on the schematic diagram and on the replacement parts list. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.

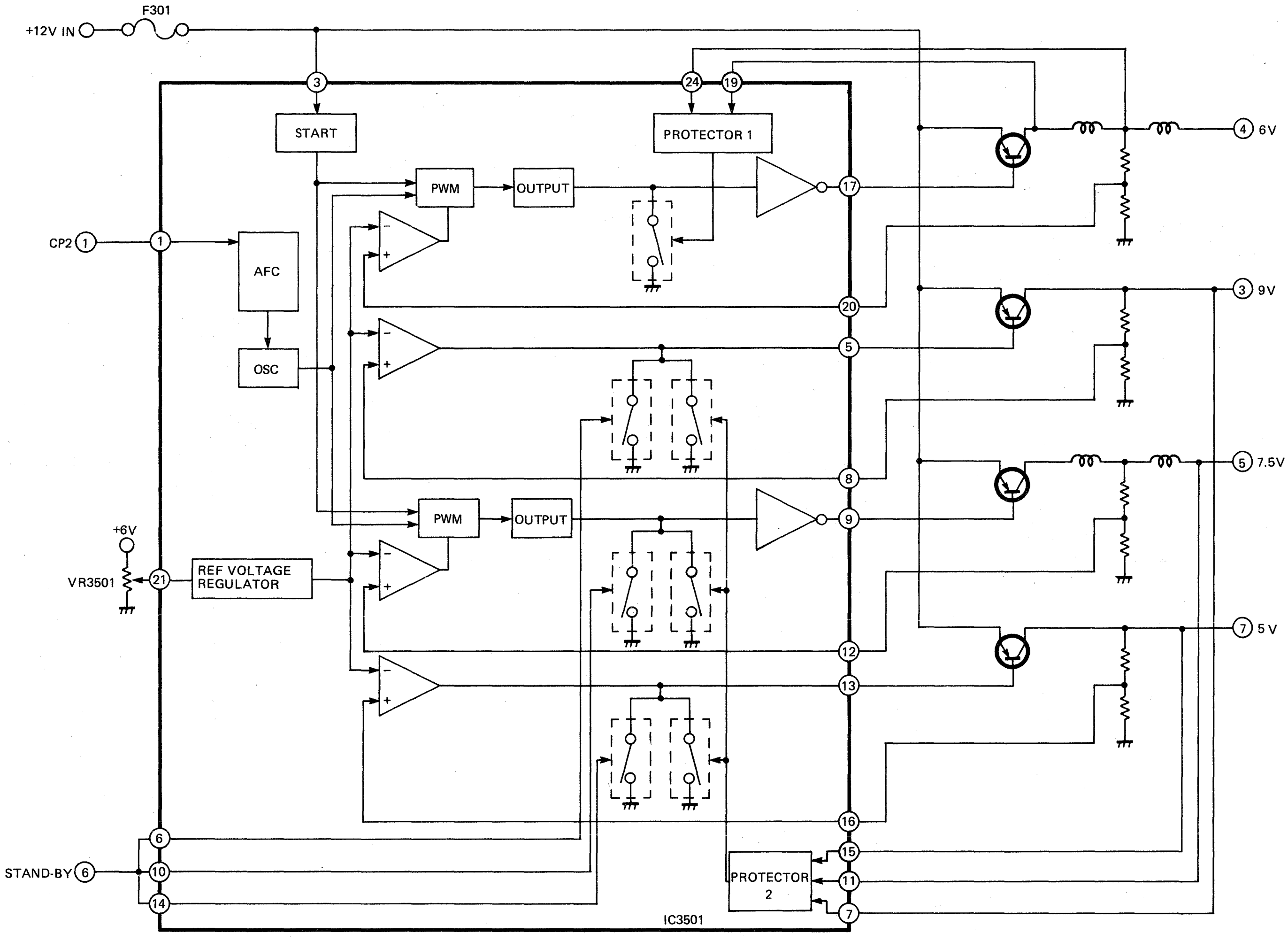
OVERALL BLOCK DIAGRAM


NEWVICON TUBE
DEFLECTION YOKE
F.B.T
SHADING CORRECTION
CP2
VSS
V. DEF
AMP
DEFLECTION CIRCUIT (Page. 9)
CRT
MEMORY
OPERATION KEY
MICROPROCESSOR
CHARACTOR
MICROPROCESSOR CIRCUIT (Page.12)
E.V.F. CIRCUIT
E.V.F. CIRCUIT (Page.15)
PRE-AMP
CARRIER TRAP
YH L.P.F.
Y/C MIX
NTSC SIGNAL
AWC
YL L.P.F.
B.P.F
1H DELAY
Rc
R SIGNAL
R-YL MODULATOR
90 SHIFT
Bc
B SIGNAL
B-YL MODULATOR
CP2
VSS
SIGNAL GENERATOR
PROCESS CIRCUIT (Page.10)

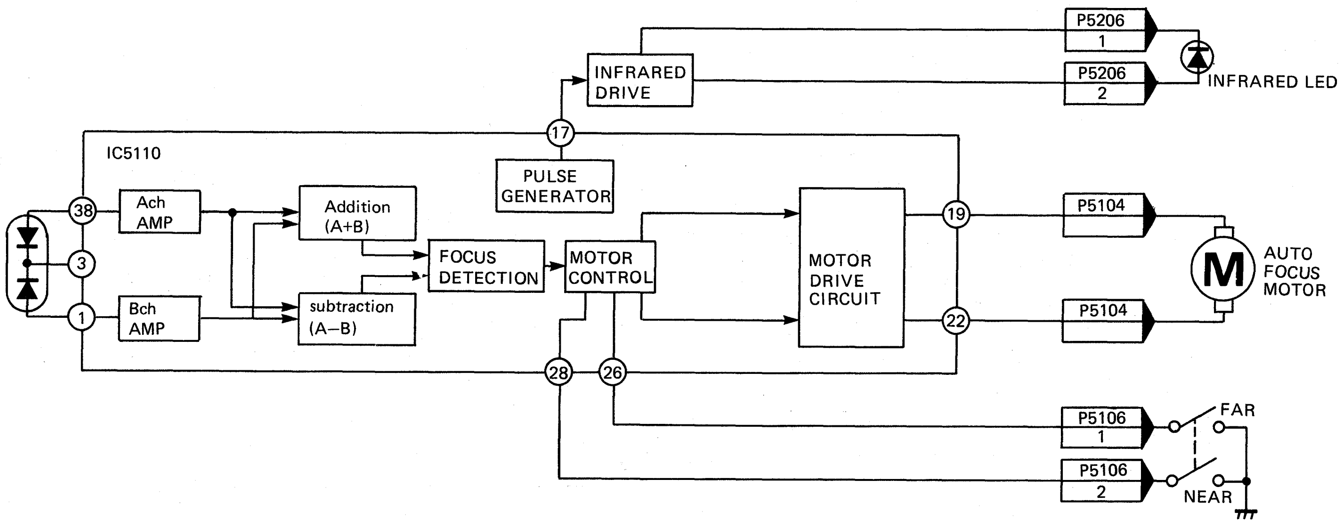
ELECTRONIC VIEWFINDER BLOCK DIAGRAMS


IC901
CHARACTER GATE
VIDEO LEVEL DISPLAY
SIGNAL AMP
MIXER
SYNC SIGNAL AMP
H. OSC
V. SYNC SIGNAL SEP
V. OSC
V. DRIVE
16
15
18
23
Hs
13
Vs
7
6
24
22
1
3
IRIS BAR
B9001 22
NTSC
B9001 25
H. SYNC
B9002 9
V. SYNC
B9002 8
P9002 8
P9002 6
VR9003
P9002 1
P9002 2
E.V.F 12P CABLE
P901 1
P901 2
P901 5
P901 6
Q901
AMP
Q903
H. DRIVE
VR902 BLIGHT
K
G1
H
CRT
G2
G3
VR903
F.B.T
T901
V. COIL
P904 4
P904 3
H. COIL
P904 2
P904 1
PICTURE REVERSE SWITCH

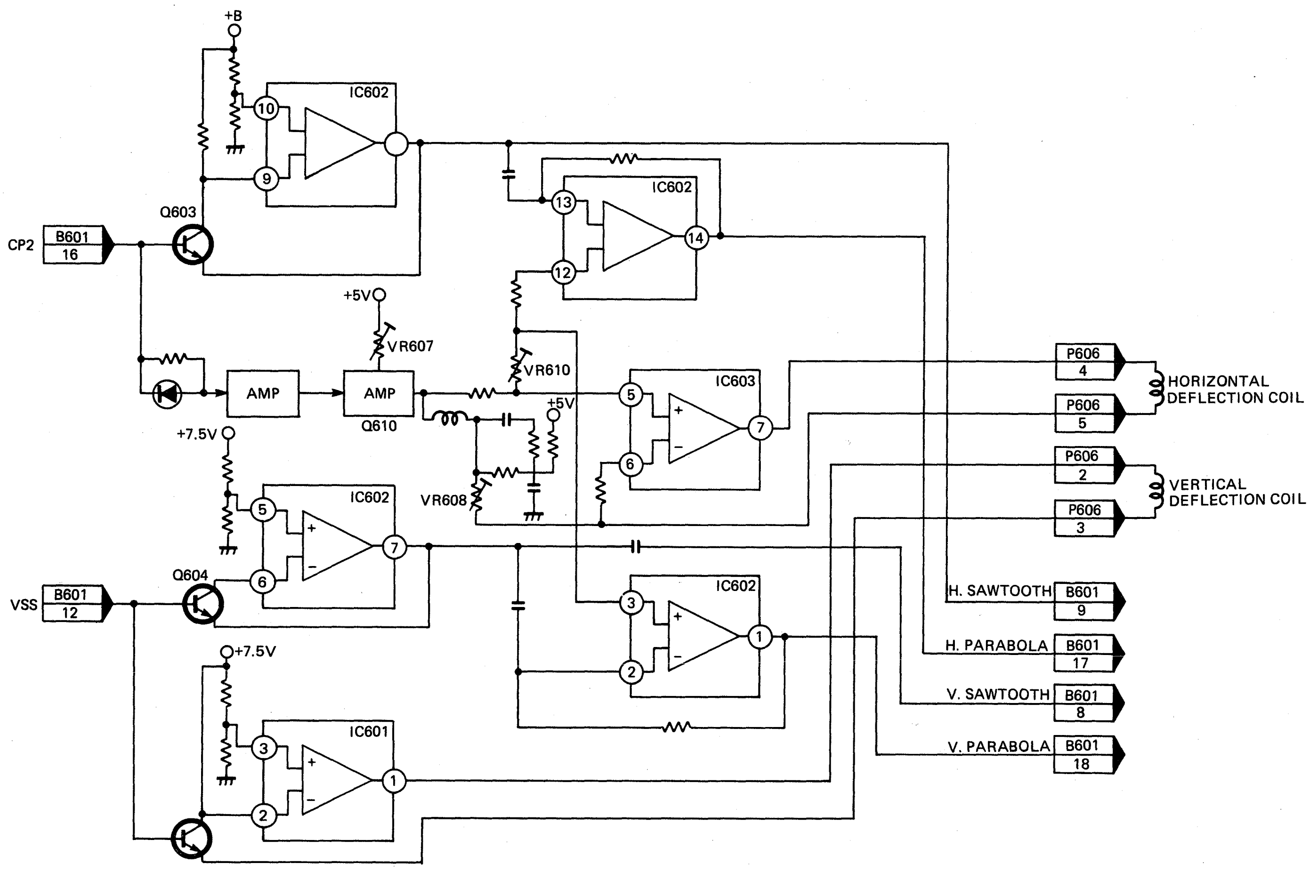
A.V.R. BLOCK DIAGRAM

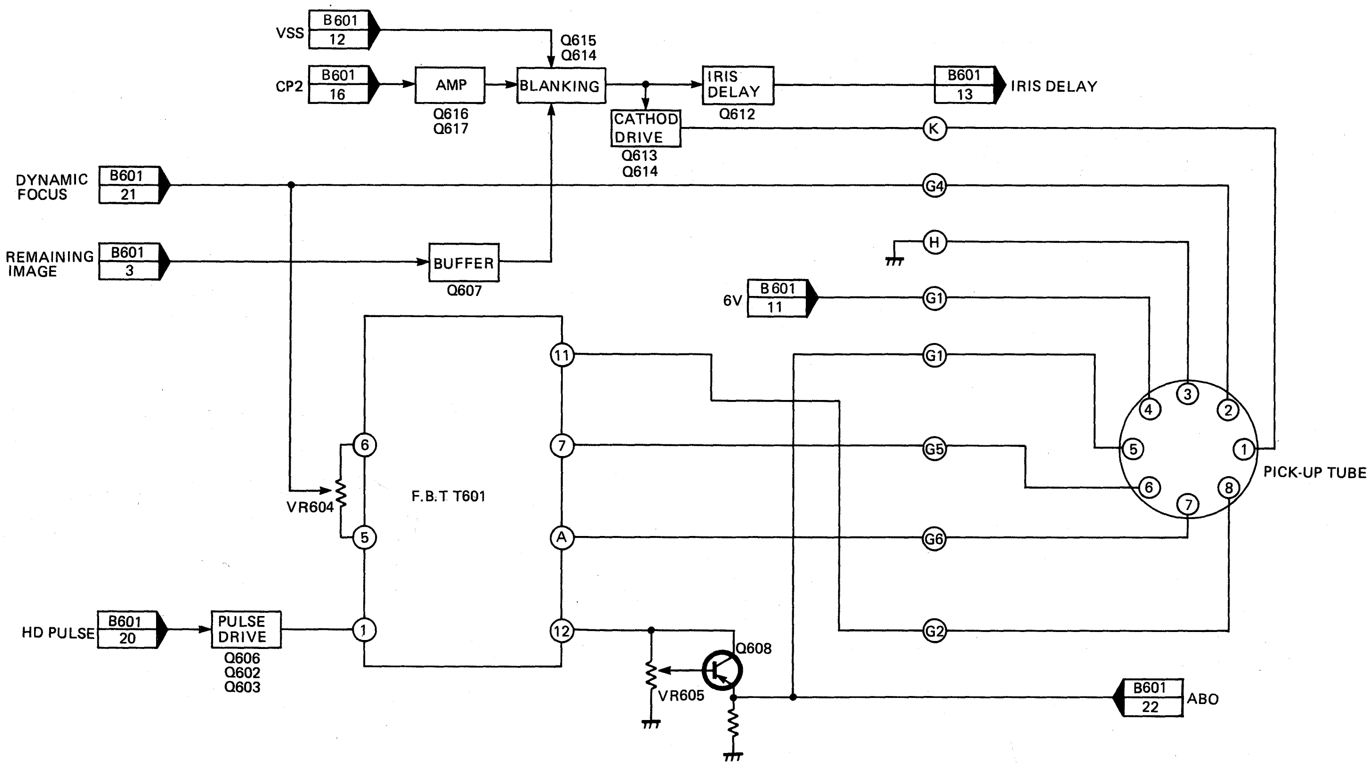

F301
+12V IN
3
24
19
START
PROTECTOR 1
PWM
OUTPUT
17
4 6V
CP2 1
1
AFC
20
OSC
5
3 9V
8
5 7.5V
PWM
OUTPUT
9
+6V
VR3501
21
REF VOLTAGE REGULATOR
12
7 5V
13
16
6
STAND-BY 6
10
14
PROTECTOR 2
15
11
7
IC3501

AUTO FOCUS BLOCK DIAGRAM

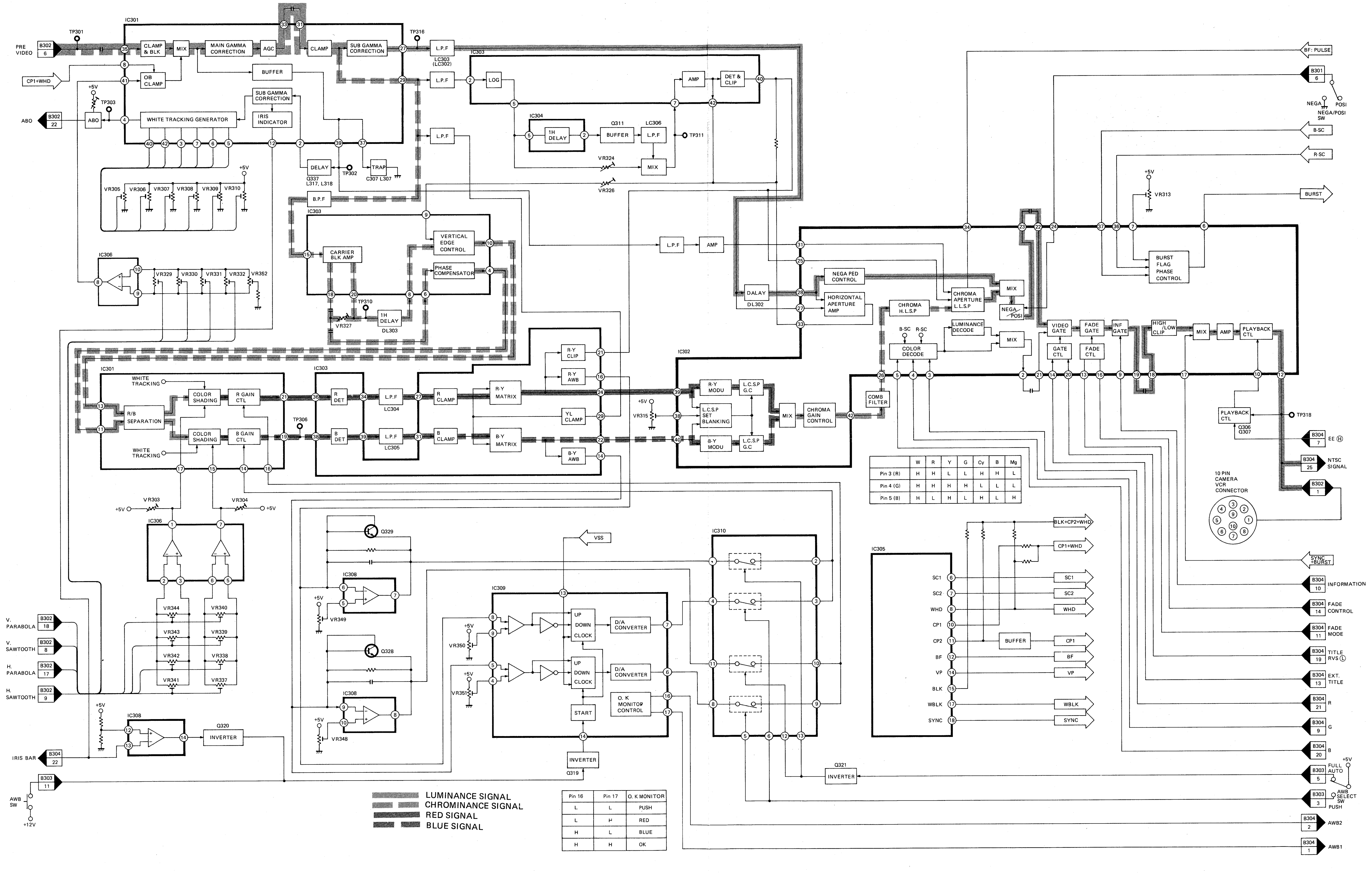

P5206
1
INFRARED DRIVE
P5206
2
INFRARED LED
17
IC5110
PULSE GENERATOR
38
Ach AMP
Addition (A+B)
FOCUS DETECTION
MOTOR CONTROL
MOTOR DRIVE CIRCUIT
19
P5104
M
AUTO FOCUS MOTOR
3
1
Bch AMP
subtraction (A–B)
22
P5104
28
26
P5106
1
FAR
P5106
2
NEAR

DEFLECTION BLOCK DIAGRAMS


+B
IC602
10
9
Q603
CP2
B601
16
IC602
13
14
12
+5V
VR607
VR610
AMP
AMP
Q610
+5V
IC603
5
6
7
+7.5V
VR608
IC602
5
6
7
Q604
VSS
B601
12
IC602
3
2
1
+7.5V
IC601
3
2
1
P606
4
HORIZONTAL DEFLECTION COIL
P606
5
P606
2
VERTICAL DEFLECTION COIL
P606
3
H. SAWTOOTH
B601
9
H. PARABOLA
B601
17
V. SAWTOOTH
B601
8
V. PARABOLA
B601
18


VSS
B601
12
Q615
Q614
CP2
B601
16
AMP
Q616
Q617
BLANKING
IRIS DELAY
Q612
B601
13
IRIS DELAY
CATHOD DRIVE
Q613
Q614
K
DYNAMIC FOCUS
B601
21
G4
H
REMAINING IMAGE
B601
3
BUFFER
Q607
6V
B601
11
G1
11
G1
6
7
G5
VR604
F.B.T T601
5
A
G6
HD PULSE
B601
20
PULSE DRIVE
Q606
Q602
Q603
1
12
G2
Q608
VR605
B601
22
ABO
PICK-UP TUBE
1
2
3
4
5
6
7
8

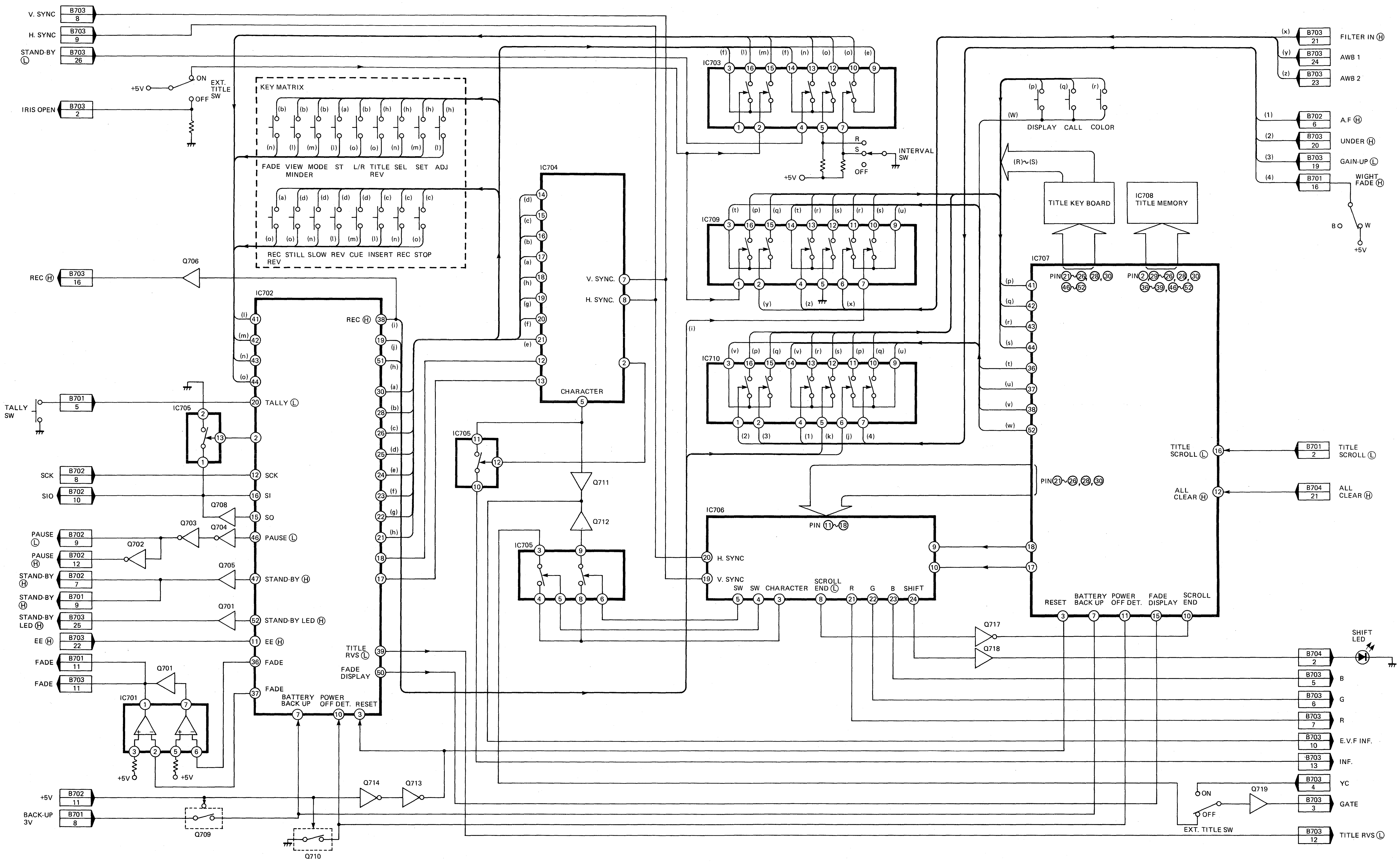
PROCESS BLOCK DIAGRAM


IC301
TP301
PRE VIDEO
B302 6
CLAMP & BLK
MIX
MAIN GAMMA CORRECTION
AGC
CLAMP
SUB GAMMA CORRECTION
TP316
L.P.F
LC303 (LC302)
IC303
LOG
AMP
DET & CLIP
CP1+WHD
OB CLAMP
BUFFER
SUB GAMMA CORRECTION
IRIS INDICATOR
ABO
B302 22
TP303
WHITE TRACKING GENERATOR
+5V
IC304
1H DELAY
Q311
BUFFER
LC306
TP311
VR324
MIX
VR326
DELAY
Q337 L317, L318
TP302
TRAP
C307 L307
VR305
VR306
VR307
VR308
VR309
VR310
B.P.F
VERTICAL EDGE CONTROL
CARRIER BLK AMP
PHASE COMPENSATOR
TP310
VR327
1H DELAY
DL303
IC306
VR329
VR330
VR331
VR332
VR352
BF: PULSE
B301 6
NEGA
POSI
NEGA/POSI SW
B-SC
R-SC
VR313
BURST
BURST FLAG PHASE CONTROL
DALAY
DL302
NEGA PED CONTROL
HORIZONTAL APERTURE AMP
CHROMA H.L.S.P
CHROMA APERTURE L.L.S.P
MIX
NEGA POSI
LUMINANCE DECODE
COLOR DECODE
VIDEO GATE
FADE GATE
INF GATE
HIGH LOW CLIP
AMP
PLAYBACK CTL
GATE CTL
FADE CTL
IC302
R-Y CLIP
R-Y AWB
YL CLAMP
B-Y AWB
R-Y MODU
L.C.S.P G.C
L.C.S.P SET BLANKING
B-Y MODU
MIX
CHROMA GAIN CONTROL
COMB FILTER
VR315
WHITE TRACKING
COLOR SHADING
R GAIN CTL
R/B SEPARATION
B GAIN CTL
TP306
R DET
B DET
LC304
LC305
R CLAMP
B CLAMP
R-Y MATRIX
B-Y MATRIX
PLAYBACK CTL
TP318
Q306 Q307
B304 7 EE Ⓗ
B304 25 NTSC SIGNAL
B302 1
10 PIN CAMERA VCR CONNECTOR
VR303
VR304
VR344
VR340
VR343
VR339
VR342
VR338
VR341
VR337
V. PARABOLA B302 18
V. SAWTOOTH B302 8
H. PARABOLA B302 17
H. SAWTOOTH B302 9
IC308
Q320
INVERTER
IRIS BAR B304 22
B303 11
AWB SW
+12V
Q329
Q328
VR349
VR348
VSS
IC309
UP DOWN CLOCK
D/A CONVERTER
VR350
VR351
START
O. K MONITOR CONTROL
INVERTER
Q319
IC310
Q321
IC305
SC1
SC2
WHD
CP1
CP2
BF
VP
BLK
WBLK
SYNC
BUFFER
BLK+CP2+WHD
CP1+WHD
SYNC +BURST
B304 10 INFORMATION
B304 14 FADE CONTROL
B304 11 FADE MODE
B304 19 TITLE RVS Ⓛ
B304 13 EXT. TITLE
B304 21 R
B304 9 G
B304 20 B
B303 5 FULL AUTO
B303 3 AWB SELECT SW PUSH
B304 2 AWB2
B304 1 AWB1
LUMINANCE SIGNAL
CHROMINANCE SIGNAL
RED SIGNAL
BLUE SIGNAL

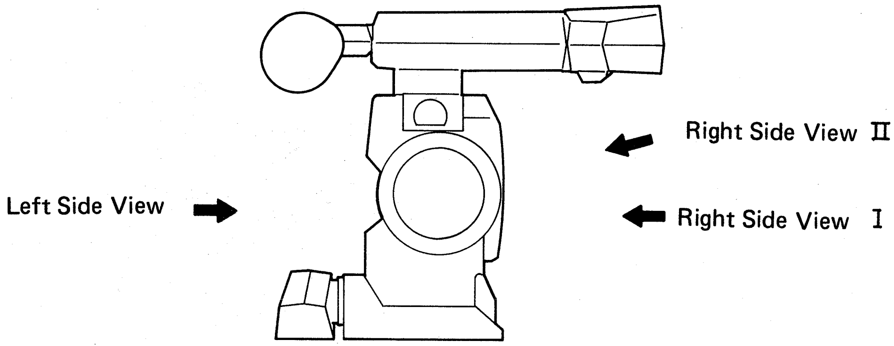
	W	R	Y	G	Cy	B	Mg
Pin 3 (R)	H	H	L	L	H	H	L
Pin 4 (G)	H	H	H	H	L	L	L
Pin 5 (B)	H	L	H	L	H	L	H

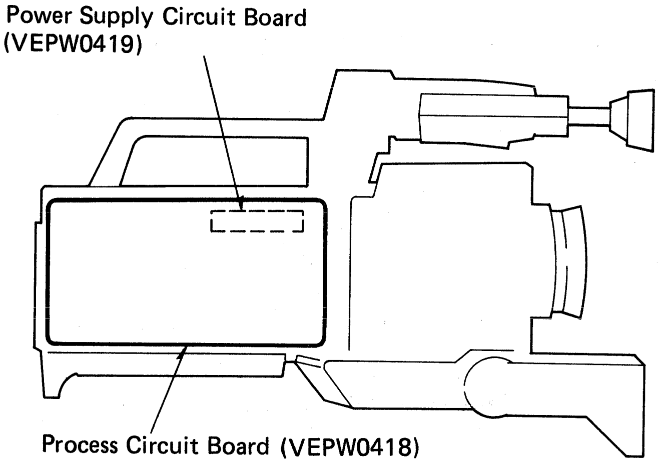
Pin 16	Pin 17	O. K MONITOR
L	L	PUSH
L	H	RED
H	L	BLUE
H	H	OK

MICRO PROCESSOR BLOCK DIAGRAM


V. SYNC
B703 8
H. SYNC
B703 9
STAND-BY Ⓛ
B703 26
+5V
ON
OFF
EXT. TITLE SW
IRIS OPEN
B703 2
KEY MATRIX
(b) (b) (b) (a) (b) (h) (h) (h) (h)
(n) (l) (m) (l) (o) (o) (n) (m) (l)
FADE VIEW MINDER MODE ST L/R TITLE REV SEL SET ADJ
(a) (d) (d) (d) (d) (c) (c) (c)
(o) (o) (n) (l) (m) (l) (n) (o)
REC REV STILL SLOW REV CUE INSERT REC STOP
REC Ⓗ
B703 16
Q706
IC702
REC Ⓗ
TALLY SW
B701 5
TALLY Ⓛ
IC705
SCK
B702 8
SIO
B702 10
SCK
SI
SO
Q708
Q703
Q704
Q702
PAUSE Ⓛ
B702 9
PAUSE Ⓗ
B702 12
PAUSE Ⓛ
Q705
STAND-BY Ⓗ
B702 7
STAND-BY Ⓗ
B701 9
STAND-BY Ⓗ
Q701
STAND-BY LED Ⓗ
B703 25
STAND-BY LED Ⓗ
EE Ⓗ
B703 22
EE Ⓗ
FADE
B701 11
FADE
B703 11
FADE
FADE
Q701
IC701
+5V
+5V
TITLE RVS Ⓛ
FADE DISPLAY
BATTERY BACK UP
POWER OFF DET.
RESET
+5V
B702 11
BACK-UP 3V
B701 8
Q709
Q710
Q714
Q713
IC704
V. SYNC.
H. SYNC.
CHARACTER
IC705
Q711
Q712
IC705
IC703
(f) (l) (m) (f) (n) (o) (o) (e)
R
S
INTERVAL SW
OFF
+5V
IC709
(t) (p) (q) (t) (r) (s) (r) (s) (u)
(y) (z) (x)
(i)
IC710
(v) (p) (q) (v) (r) (s) (p) (q) (u)
(2) (3) (1) (k) (j) (4)
IC706
PIN ⑪~⑱
H. SYNC
V. SYNC
SW
SW
CHARACTER
SCROLL END Ⓛ
R
G
B
SHIFT
(p) (q) (r)
(W)
DISPLAY CALL COLOR
(R)~(S)
TITLE KEY BOARD
IC708 TITLE MEMORY
IC707
PIN ㉑~㉖, ㉘, ㉚ ㊻~52
PIN ②, ㉙~㉖, ㉘, ㉚ ㊱~㊴, ㊻~52
(p) (q) (r) (s) (t) (u) (v) (w)
PIN ㉑~㉖, ㉘, ㉚
TITLE SCROLL Ⓛ
ALL CLEAR Ⓗ
RESET
BATTERY BACK UP
POWER OFF DET.
FADE DISPLAY
SCROLL END
Q717
Q718
Q719
ON
OFF
EXT. TITLE SW
(x) B703 21 FILTER IN Ⓗ
(y) B703 24 AWB 1
(z) B703 23 AWB 2
(1) B702 6 A.F Ⓗ
(2) B703 20 UNDER Ⓗ
(3) B703 19 GAIN-UP Ⓛ
(4) B701 16 WIGHT FADE Ⓗ
B
W
+5V
B701 2 TITLE SCROLL Ⓛ
B704 21 ALL CLEAR Ⓗ
SHIFT LED
B704 2
B703 5 B
B703 6 G
B703 7 R
B703 10 E.V.F INF.
B703 13 INF.
B703 4 YC
B703 3 GATE
B703 12 TITLE RVS Ⓛ

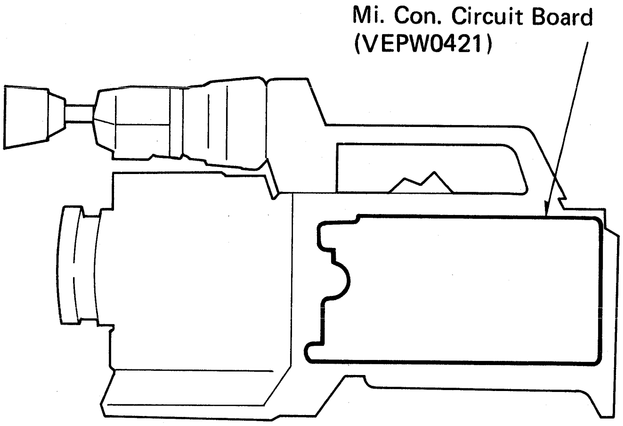
CIRCUIT BOARD LAYOUT


Right Side View II
Left Side View
Right Side View I



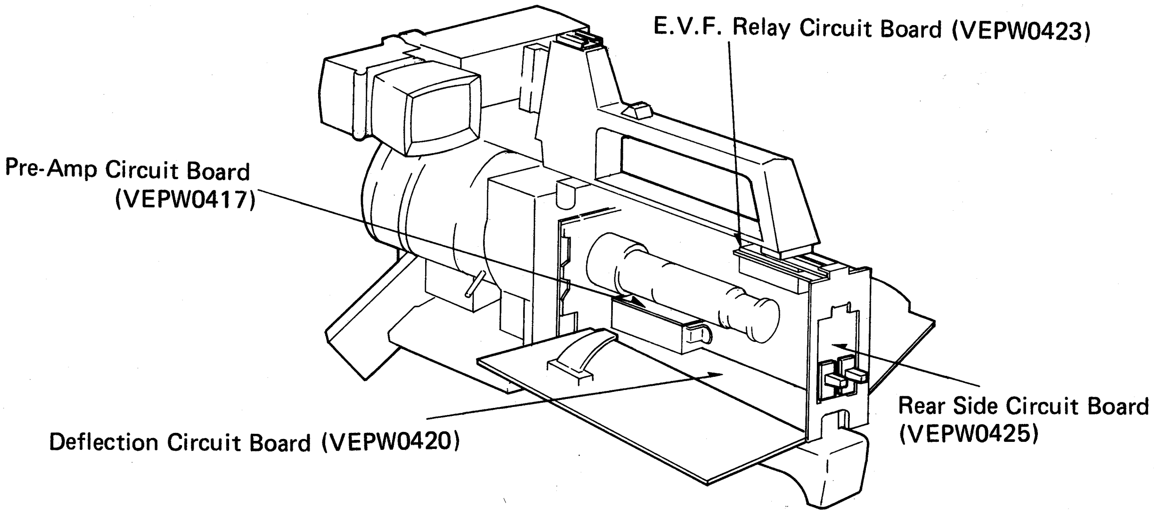
Left Side View

Power Supply Circuit Board
(VEPW0419)
Process Circuit Board (VEPW0418)



Right Side View I

Mi. Con. Circuit Board
(VEPW0421)



Right Side View II

E.V.F. Relay Circuit Board (VEPW0423)
Pre-Amp Circuit Board
(VEPW0417)
Rear Side Circuit Board
(VEPW0425)
Deflection Circuit Board (VEPW0420)

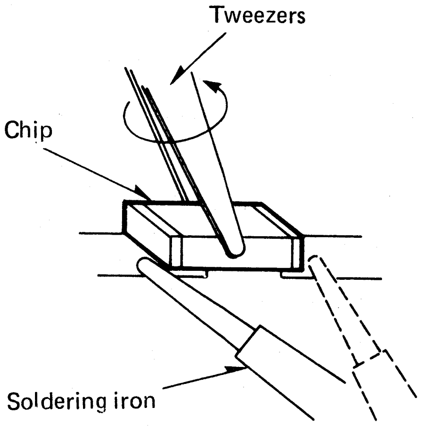
Chip Components

A. Precautions in replacing the chip component

1. Make sure that the unit is turned OFF before replacing the chip.
2. Use tweezers to handle the chip to prevent any damage to the chip surface.
3. Do not re-use the chips after removal.
4. Do not rub the electrode of the chips.
5. Do not subject the chips to excessive stress.
6. It is recommended that a pencil-type soldering iron be used.
7. Solder with diameter of less than 0.5mm is recommended.
8. Do not heat the chip from more than 3 seconds.
9. Maintain the temperature under 260°C (500°F) when soldering.

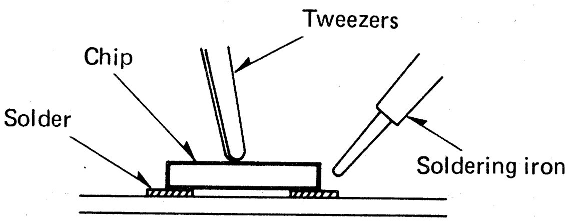
B. Removal

1. Add solder to both ends of the chip (three leads on the chip transistor).
2. Holding the soldering iron to both ends of the chip (the three leads on the chip transistor) as shown below and remove the chip by turning it with the tweezers.
   Note: Be careful not to damage the other chips.

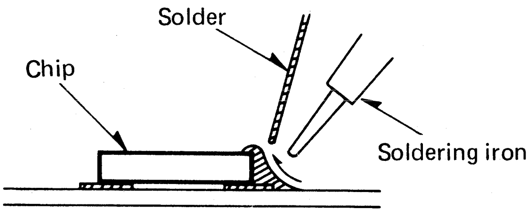


C. Mounting

1. Apply the solder thinly on the chip mounting foil.
2. Solder the chip temporarily while holding the chip with the tweezers.



3. Solder both ends of the chip (three leads on the chip transistor).

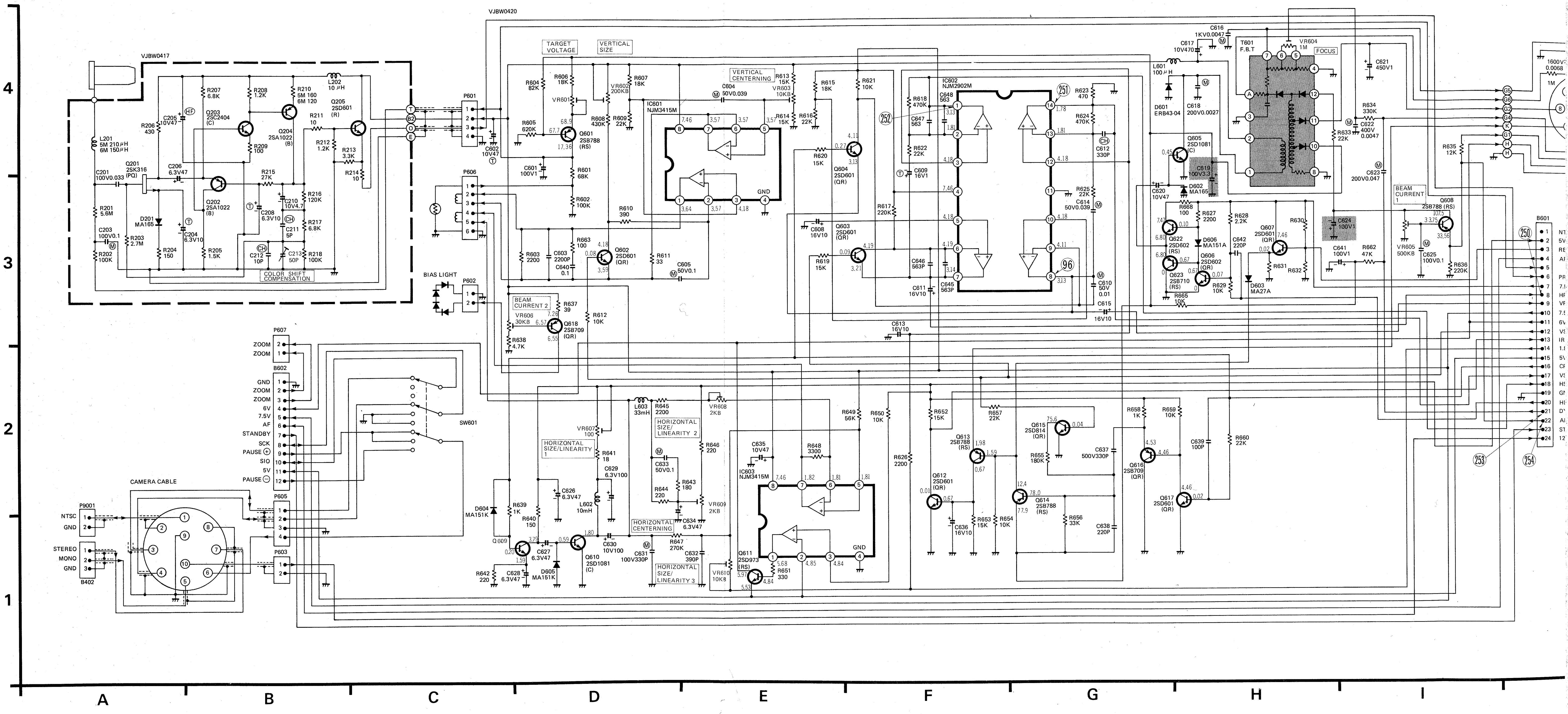


DEFLECTION SCHEMATIC DIAGRAM
PRE-AMP SCHEMATIC DIAGRAM

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY SHADE HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

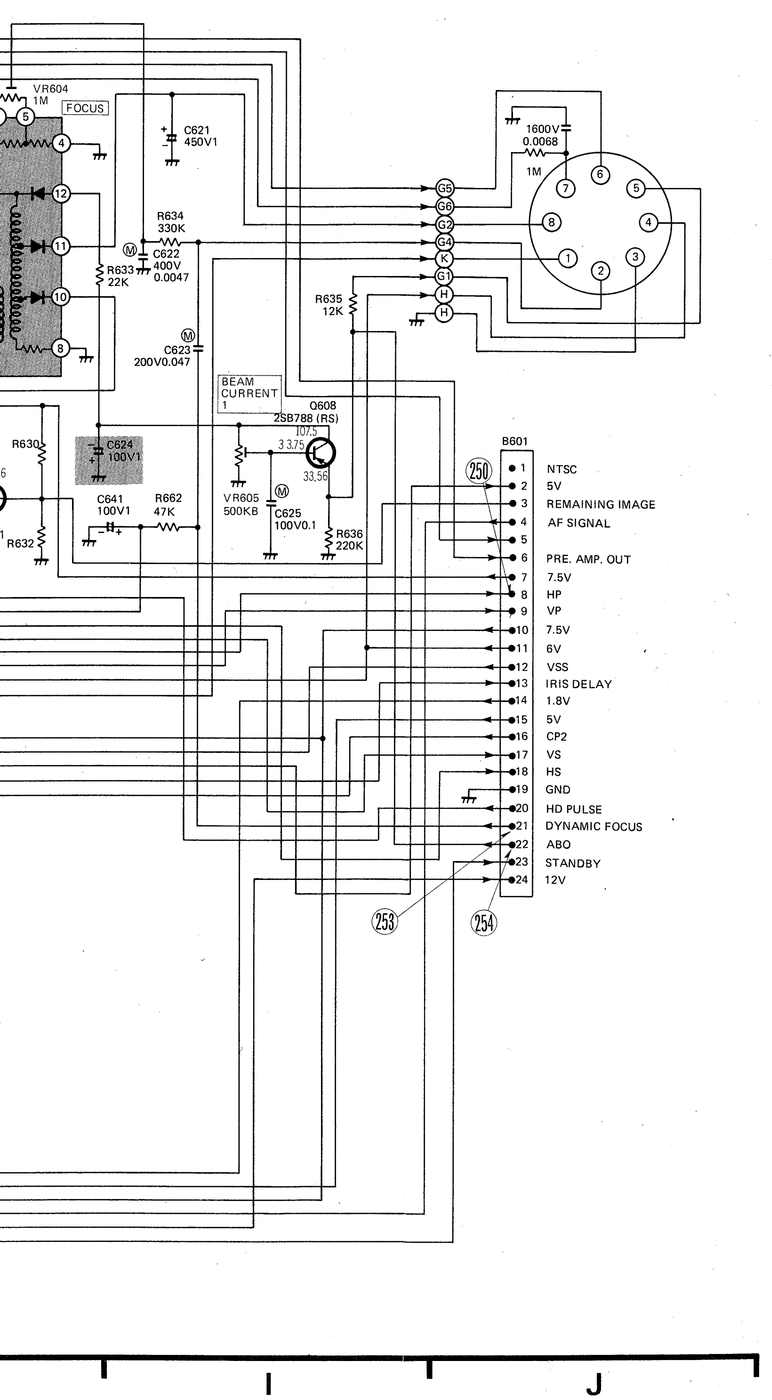
NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

1 Ⓜ MYLAR CAPAC
2 Ⓝ NON POLARIT
3 Ⓣ TANTALUM CA


VJBW0417
VJBW0420
4
3
2
1
A
B
C
D
E
F
G
H
I
L201 5M 210μH 6M 150μH
C201 100V0.033
R201 5.6M
C203 100V0.1
R202 100K
R203 2.7M
D201 MA165
Q201 2SK316 (PQ)
C206 6.3V47
R206 430
C205 10V47
R207 6.8K
R208 1.2K
R209 100
Q203 2SC2404 (C)
Q202 2SA1022 (B)
Q204 2SA1022 (B)
R210 5M 160 6M 120
L202 10μH
Q205 2SD601 (R)
R211 10
R212 1.2K
R213 3.3K
R214 10
R215 27K
R216 120K
R217 6.8K
R218 100K
C208 6.3V10
C210 10V4.7
C211 5P
C212 10P
C213 50P
C204 6.3V10
R204 150
R205 1.5K
COLOR SHIFT COMPENSATION
P601
P606
P602
BIAS LIGHT
C602 10V47
TARGET VOLTAGE
VERTICAL SIZE
R604 82K
R606 18K
VR601
R605 620K
Q601 2SB788 (RS)
C601 100V1
R601 68K
R602 100K
R603 2200
C603 2200P
C640 0.1
R663 100
Q602 2SD601 (QR)
R607 18K
VR602 200KB
R608 430K
R609 22K
R610 390
R611 33
C605 50V0.1
IC601 NJM3415M
VERTICAL CENTERING
C604 50V0.039
R613 15K
VR603 10KB
R614 15K
R615 18K
R616 22K
R621 10K
R620 15K
Q604 2SD601 (QR)
C608 16V10
Q603 2SD601 (QR)
R619 15K
R617 220K
IC602 NJM2902M
R618 470K
C648 563
C647 563
R622 22K
C609 16V1
C646 563P
C611 16V10
C645 563P
R623 470
R624 470K
C612 330P
R625 22K
C614 50V0.039
C610 50V 0.01
C615 16V10
C613 16V10
BEAM CURRENT 2
VR606 30KB
R637 39
Q618 2SB709 (QR)
R638 4.7K
R612 10K
C617 10V470
C616 1KV0.0047
L601 100μH
D601 ERB43-04
C618 200V0.0027
T601 F.B.T
VR604 1M
FOCUS
C621 450V1
R634 330K
C622 400V 0.0047
R633 22K
C623 200V0.047
Q605 2SD1081 (C)
C619 100V3.3
C620 10V47
D602 MA165
R668 100
R627 2200
R628 2.2K
Q622 2SD602 (RS)
D606 MA151A
C642 220P
Q607 2SD601 (QR)
Q623 2SB710 (RS)
Q606 2SD602 (QR)
R629 10K
D603 MA27A
R631
R632
R630
R665 10K
C624 100V1
C641 100V1
R662 47K
VR605 500KB
C625 100V0.1
R636 220K
BEAM CURRENT 1
Q608 2SB788 (RS)
R635 12K
1600V 0.0068
1M
B601
P607
ZOOM
B602
GND
6V
7.5V
AF
STANDBY
SCK
PAUSE ⊕
SIO
5V
PAUSE ⊖
SW601
CAMERA CABLE
P9001
NTSC
STEREO
MONO
B402
P605
P603
L603 33mH
R645 2200
HORIZONTAL SIZE/ LINEARITY 2
VR608 2KB
R646 220
VR607 100
HORIZONTAL SIZE/LINEARITY 1
R641 18
C629 6.3V100
C626 6.3V47
L602 10mH
D604 MA151K
R639 1K
R640 150
Q609
Q610 2SD1081 (C)
C627 6.3V47
D605 MA151K
R642 220
C628 6.3V47
C630 10V100
C631 100V330P
C633 50V0.1
R643 180
R644 220
VR609 2KB
C634 6.3V47
HORIZONTAL CENTERNING
R647 270K
C632 390P
HORIZONTAL SIZE/ LINEARITY 3
VR610 10KB
C635 10V47
IC603 NJM3415M
R648 3300
Q611 2SD973 (RS)
R651 330
R649 56K
R650 10K
R626 2200
R652 15K
Q612 2SD601 (QR)
C636 16V10
Q613 2SB788 (RS)
R653 15K
R654 10K
R657 22K
Q615 2SD814 (QR)
R655 180K
Q614 2SB788 (RS)
R656 33K
C637 500V330P
C638 220P
R658 1K
R659 10K
Q616 2SB709 (QR)
Q617 2SD601 (QR)
C639 100P
R660 22K
GND
(250)
(251)
(252)
(253)
(254)
(96)

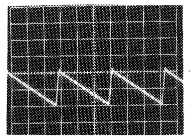
SPECIAL NOTE All integrated circuits and many other semiconductor devices are electrosta therefore require the special handling techniques described under the "Electrostatically Sen section of this service manual.

1 Ⓜ MYLAR CAPACITOR
2 Ⓝ NON POLARITY CAPACITOR
3 Ⓣ TANTALUM CAPACITOR

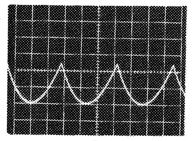

VR604
1M
FOCUS
C621
450V1
R634
330K
Ⓜ C622
400V
0.0047
R633
22K
Ⓜ C623
200V0.047
R635
12K
1600V
0.0068
1M
G5
G6
G2
G4
K
G1
H
H
BEAM CURRENT 1
Q608
2SB788 (RS)
107.5
3 3.75
33.56
R630
C624
100V1
C641
100V1
R662
47K
VR605
500KB
Ⓜ C625
100V0.1
R636
220K
R632
B601
250
253
254
1 NTSC
2 5V
3 REMAINING IMAGE
4 AF SIGNAL
5
6 PRE. AMP. OUT
7 7.5V
8 HP
9 VP
10 7.5V
11 6V
12 VSS
13 IRIS DELAY
14 1.8V
15 5V
16 CP2
17 VS
18 HS
19 GND
20 HD PULSE
21 DYNAMIC FOCUS
22 ABO
23 STANDBY
24 12V
I
J

NOTE All integrated circuits and many other semiconductor devices are electrostatically sensitive and require the special handling techniques described under the "Electrostatically Sensitive (ES) Devices" f this service manual.

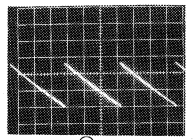
SIGNAL WAVE FORM (DEFLECTION)



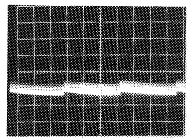
96. IC602 ⑧
2.2Vp-p(0.1V/20μs div.)



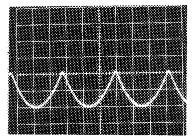
252. IC602 ①
2.5Vp-p(0.1V/5μs div)



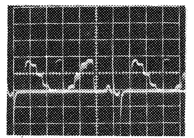
250. B601 ⑧
2.6Vp-p(0.1V/5μs div.)



253. B601 ㉑
1Vp-p(1V/5μs div.)



251. IC602 ⑭
2.2Vp-p(0.1V/20μs div.)

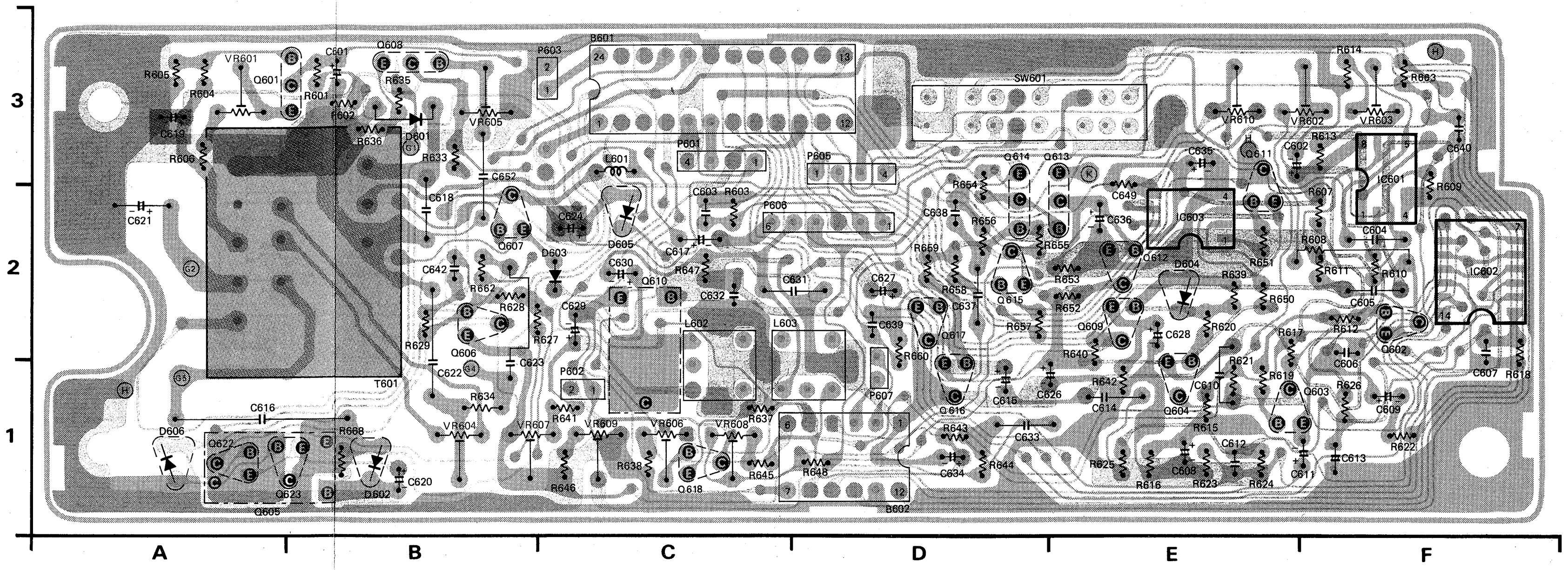


254. B601 ㉒
1.8Vp-p(0.1V/10μs div.)

Schematic Diagram

VR601	TARGET VOLTAGE	D-4
VR602	VERTICAL SIZE	D-4
VR603	VERTICAL CENTERNING	E-4
VR604	FOCUS	H-4
VR605	BEAM CURRENT 1	I-3
VR606	BEAM CURRENT 2	C-3
VR607	HORIZONTAL SIZE/LINEARITY 1	D-2
VR608	HORIZONTAL SIZE/LINEARITY 2	E-2
VR609	HORIZONTAL CENTERNING	E-2
VR610	HORIZONTAL SIZE/LINEARITY 3	E-1
C213	COLOR SHIFT COMPENSATION	B-3

DEFLECTION CIRCUIT BOARD (VEPW0420)


3
2
1
A
B
C
D
E
F
B601
SW601
P601
P602
P603
P605
P606
P607
IC601
IC602
IC603
T601
L601
L602
L603
VR601
VR602
VR603
VR604
VR606
VR607
VR608
VR609
VR610
D601
D602
D603
D604
D605
D606
Q601
Q602
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C652
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R619
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R621
R622
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R624
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R627
R628
R629
R633
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R635
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R638
R639
R640
R641
R642
R643
R644
R645
R646
R647
R648
R650
R651
R652
R653
R655
R656
R657
R658
R659
R660
R663
R664
R688

IMPORTANT SAFETY NOTICE.
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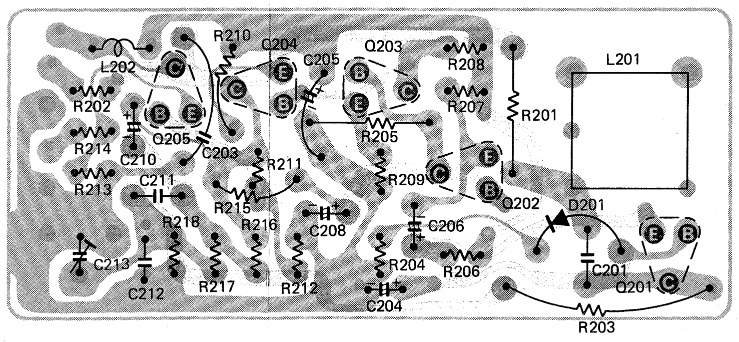
PRE-AMP CIRCUIT BOARD (VEPW0417)


L202
R210
C204
C205
Q203
R208
L201
R202
R207
R201
R214
Q205
C210
C203
R205
R211
R209
R213
C211
R218
R215
R216
C208
C206
Q202
D201
C213
C212
R217
R212
R204
R206
C201
Q201
C204
R203

P601

1	TARGET
2	7.5V
3	PRE AMP OUT
4	GND

P602

1	GND
2	BIAS LIGHT

P603

1	12V
2	GND

P605

1	SIO
2	SCK
3	GND
4	PAUSE

P607

	ZOOM
	ZOOM

B602

1	GND
2	ZOOM
3	ZOOM
4	6V
5	7.5V
6	AF
7	STANDBY
8	MODE
9	MODE
10	MODE
11	5V
12	MODE

B601

1	NTSC
2	5V
3	
4	AF
5	TP
6	PRE AMP OUT
7	7.5V
8	H P
9	V D
10	7.5V
11	6V
12	VSS
13	IRIS DELAY
14	1.8V
15	5V Ⓑ
16	CP2
17	VS
18	HS
19	GND
20	HD PULSE
21	DYNAMIC. F
22	ABO
23	STANDBY
24	12V

P606

1	THERMISTOR
2	V COIL
3	V COIL
4	H COIL
5	H COIL
6	GND

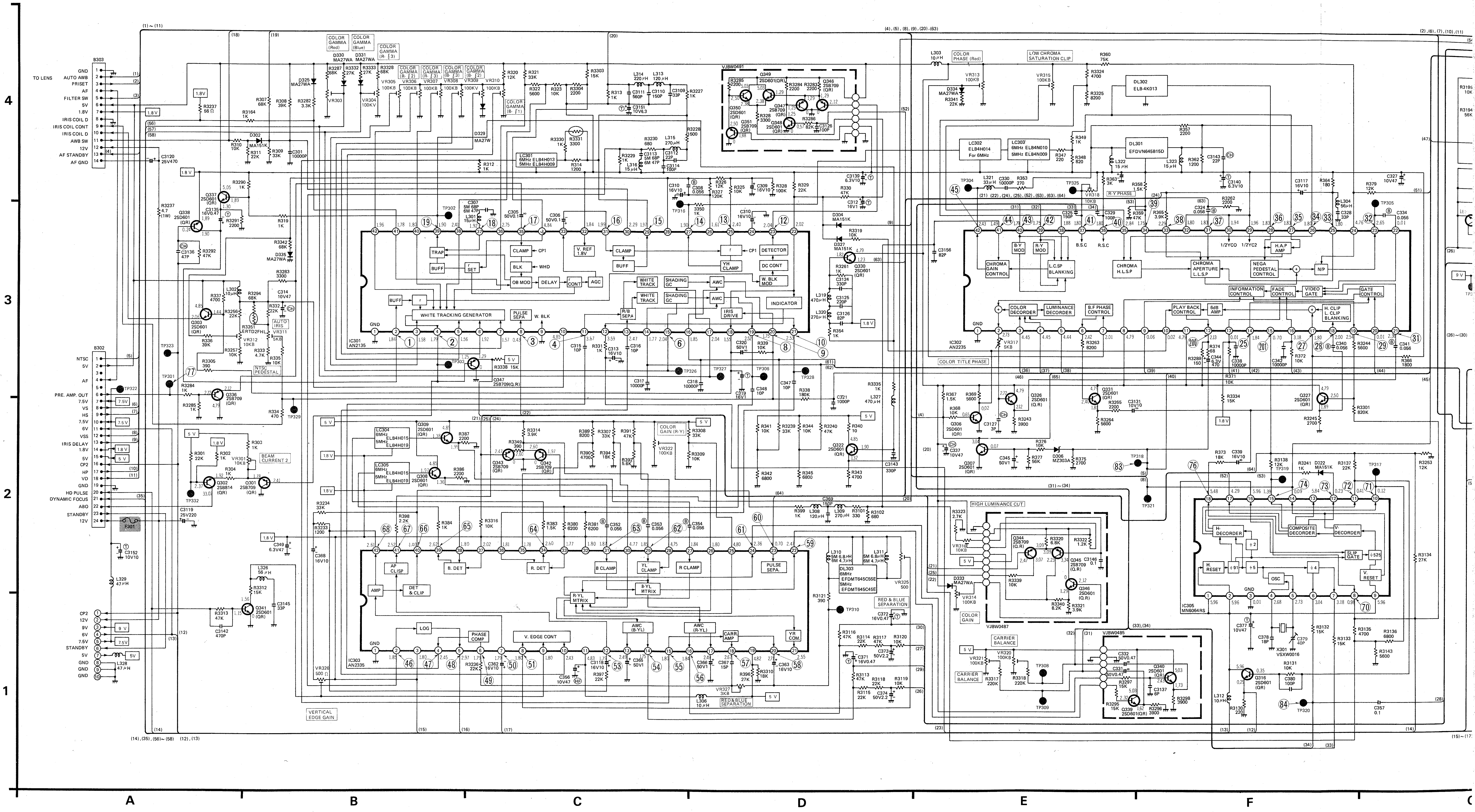
Circuit Board

IC601	F-3
IC602	F-2
IC603	E-2
Q601	B-3
Q602	F-2
Q603	E-1
Q604	E-1
Q605	A-1
Q606	B-2
Q607	B-2
Q608	B-3
Q609	E-2
Q611	E-2
Q612	E-2
Q613	E-2
Q614	D-2
Q615	D-2
Q616	D-1
Q617	D-2
Q618	C-1
Q619	F-3
Q622	B-1
Q623	A-1
D601	B-3
D602	B-1
D603	D-2
D604	E-2
D605	C-2
VR601	A-3
VR602	F-3
VR603	F-3
VR604	B-1
VR605	B-3
VR606	C-1
VR607	B-1
VR608	C-1
VR609	C-1
VR610	E-3

PROCESS SCHEMATIC DIAGRAM

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY SHADE HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

SPECIAL NOTE All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "Electrostatically Sensitive (ES) Devices" section of this service manual.

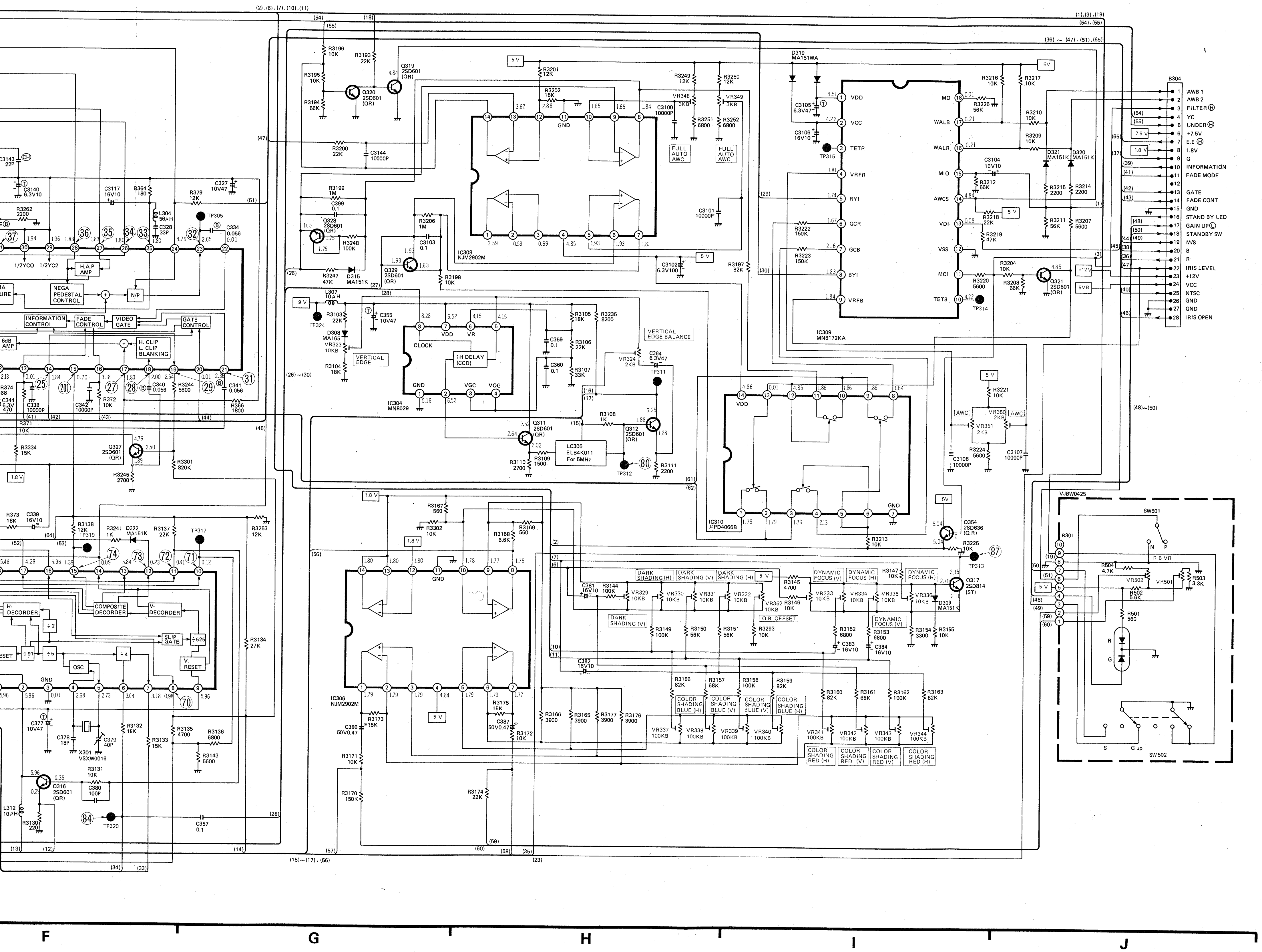


B303
TO LENS
GND
AUTO AWB
PRISET
AF
FILTER SW
5V
1.8V
IRIS COIL D
IRIS COIL CONT
IRIS COIL D
AWB SW
12V
AF STANDBY
AF GND
B302
NTSC
5V
AF
PRE. AMP. OUT
7.5V
VS
HS
7.5V
6V
VSS
IRIS DELAY
1.8V
5V
CP2
HP
VD
GND
HD PULSE
DYNAMIC FOCUS
ABO
STANDBY
12V
F301
CP2
12V
9V
6V
7.5V
STANDBY
5V
GND
GND
GND
COLOR GAMMA (Red)
COLOR GAMMA (Blue)
COLOR GAMMA (R · Γ3)
COLOR GAMMA (B · Γ1)
VJBW0491
LC301 6MHz ELB4H013 5MHz ELB4H009
IC301 AN2135
TRAP
BUFF
γ SET
CLAMP
BLK
OB MOD
DELAY
γ CONT
AGC
V. REF 1.8V
CLAMP
BUFF
YH CLAMP
DETECTOR
DC CONT
W. BLK MOD
WHITE TRACK
SHADING GC
AWC
INDICATOR
IRIS DRIVE
R/B SEPA
WHITE TRACKING GENERATOR
PULSE SEPA
W. BLK
AUTO IRIS
NTSC PEDESTAL
BEAM CURRENT 2
COLOR GAIN (R-Y)
LC304 6MHz ELB4H015 5MHz ELB4H019
LC305 6MHz ELB4H015 5MHz ELB4H019
IC303 AN2335
AP CLISP
AMP
DET & CLIP
B. DET
R. DET
B CLAMP
YL CLAMP
R CLAMP
PULSE SEPA.
R-YL MTRIX
B-YL MTRIX
LOG
PHASE COMP
V. EDGE CONT
AWC (B-YL)
AWC (R-YL)
CARR AMP
YR COM.
VERTICAL EDGE GAIN
RED & BLUE SEPARATION
DL303 6MHz EFDMT645C55E 5MHz EFDMT645C45E
COLOR PHASE (Red)
LOW CHROMA SATURATION CLIP
DL302 ELB-4K013
LC302 ELB4H014 For 6MHz
LC303 6MHz ELB4N010 5MHz ELB4N009
DL301 EFDVN645B15D
R-Y PHASE
IC302 AN2235
CHROMA GAIN CONTROL
B-Y MOD
R-Y MOD
L.C.SP BLANKING
CHROMA H.L.SP
CHROMA APERTURE L.L.S.P
NEGA PEDESTAL CONTROL
H.A.P AMP
N/P
INFORMATION CONTROL
FADE CONTROL
VIDEO GATE
GATE CONTROL
COLOR DECORDER
LUMINANCE DECORDER
B.F PHASE CONTROL
PLAY BACK CONTROL
6dB AMP
H. CLIP L. CLIP BLANKING
COLOR TITLE PHASE
HIGH LUMINANCE CUT
VJBW0487
COLOR GAIN
CARRIER BALANCE
VJBW0485
IC305 MN6064RS
H-DECORDER
COMPOSITE DECORDER
V-DECORDER
SLIP GATE
H. RESET
OSC
V. RESET
X301 VSXW0016
A
B
C
D
E
F
1
2
3
4

many other semiconductor devices are electrostatically sensitive and
iques described under the "Electrostatically Sensitive (ES) Devices"

NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

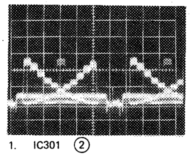
1 Ⓜ MYLAR CAPACITOR
2 Ⓝ NON POLARITY CAPACITOR
3 Ⓣ TANTALUM CAPACITOR

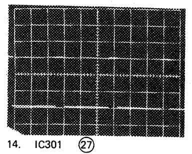

B304
1 AWB 1
2 AWB 2
3 FILTER Ⓗ
4 YC
5 UNDER Ⓗ
6 +7.5V
7 E.E Ⓗ
8 1.8V
9 G
10 INFORMATION
11 FADE MODE
12
13 GATE
14 FADE CONT
15 GND
16 STAND BY LED
17 GAIN UP Ⓛ
18 STANDBY SW
19 M/S
20 B
21 R
22 IRIS LEVEL
23 +12V
24 VCC
25 NTSC
26 GND
27 GND
28 IRIS OPEN
IC309 MN6172KA
VDD
VCC
TETR
VRFR
RYI
GCR
GCB
BYI
VRFB
MO
WALB
WALR
MIO
AWCS
VDI
VSS
MCI
TETB
IC308 NJM2902M
IC304 MN8029
CLOCK
1H DELAY (CCD)
IC310 μPD4066B
IC306 NJM2902M
LC306 EL84K011 For 5MHz
VERTICAL EDGE
VERTICAL EDGE BALANCE
FULL AUTO AWC
DARK SHADING (H)
DARK SHADING (V)
DYNAMIC FOCUS (V)
DYNAMIC FOCUS (H)
O.B. OFFSET
COLOR SHADING BLUE (H)
COLOR SHADING BLUE (V)
COLOR SHADING RED (H)
COLOR SHADING RED (V)
H.A.P AMP
NEGA PEDESTAL CONTROL
INFORMATION CONTROL
FADE CONTROL
VIDEO GATE
GATE CONTROL
H. CLIP
L. CLIP
BLANKING
H. DECORDER
COMPOSITE DECORDER
V. DECORDER
SLIP GATE
V. RESET
OSC
SW501
SW502
VJBW0425
B301
F
G
H
I
J

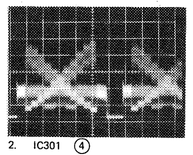
Schematic Diagram

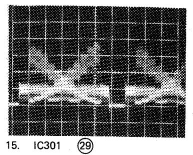
VR301	BEAM CURRENT 2	B-2
VR303	COLOR GAMMA (Red)	B-4
VR304	COLOR GAMMA (Blue)	B-4
VR305	COLOR GAMMA (R-γ3)	B-4
VR306	COLOR GAMMA (R-γ2)	B-4
VR307	COLOR GAMMA (R-γ3)	B-4
VR308	COLOR GAMMA (B-γ3)	B-4
VR309	COLOR GAMMA (B-γ2)	B-4
VR310	COLOR GAMMA (B-γ1)	C-4
VR311	AUTO IRIS	B-3
VR312	NTSC PEDESTAL	A-3
VR313	COLOR PHASE (Red)	E-4
VR314	COLOR GAIN	E-4
VR315	LOW CHROMA SATURATION CLIP	E-4
VR316	HIGH LUMINANCE CUT	E-2
VR317	COLOR TITLE PHASE	E-3
VR318	R-Y PHASE	E-3
VR320	CARRIER BALANCE	E-1
VR321	CARRIER BALANCE	E-1
VR322	COLOR GAIN (R-Y)	C-2
VR323	VERTICAL EDGE	G-3
VR324	VERTICAL EDGE BALANCE	H-3
VR325	RED & BLUE SEPARATION	D-2
VR326	VERTICAL EDGE GAIN	B-1
VR327	RED & BLUE SEPARATION	D-1
VR329	DARK SHADING (V)	H-2
VR330	DARK SHADING (H)	H-2
VR331	DARK SHADING (V)	H-2
VR332	DARK SHADING (H)	I-2
VR333	DYNAMIC FOCUS (V)	I-2
VR334	DYNAMIC FOCUS (H)	I-2
VR335	DYNAMIC FOCUS (V)	I-2
VR336	DYNAMIC FOCUS (H)	I-2
VR337	COLOR SHADING-BLUE (H)	H-1
VR338	COLOR SHADING-BLUE (V)	H-1
VR339	COLOR SHADING-BLUE (V)	I-1
VR340	COLOR SHADING-BLUE (H)	I-1
VR341	COLOR SHADING-RED (H)	I-1
VR342	COLOR SHADING-RED (V)	I-1
VR343	COLOR SHADING-RED (V)	I-1
VR344	COLOR SHADING-RED (H)	I-1
VR348	FULL AUTO AWC	H-4
VR349	FULL AUTO AWC	H-4
VR350	AWC	J-3
VR351	AWC	I-3
VR352	O.B. OFFSET	I-2

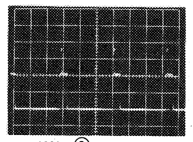
SIGNAL WAVE FORM (PROCESS)

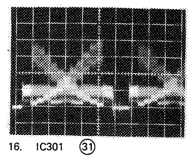

1. IC301 ② 150mVp-p(5mV/10μs div.)

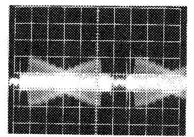

14. IC301 ㉗ 6Vp-p(0.2V/20μs div.)

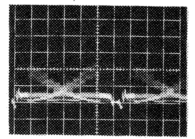

2. IC301 ④ 500mVp-p(10mV/10μs div.)

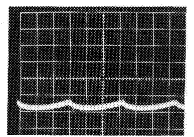

15. IC301 ㉙ 700mVp-p(20mV/10μs div.)

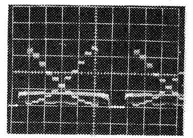

3. IC301 ⑧ 3.6Vp-p(0.1V/20μs div.)

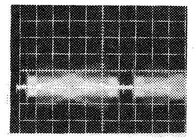

16. IC301 ㉛ 800mVp-p(20mV/10μs div.)

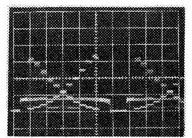

4. IC301 ⑪ 60mVp-p(2mV/10μs div.)

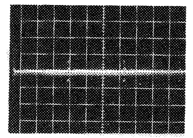

17. IC301 ㉟ 500mVp-p(20mV/10μs div.)

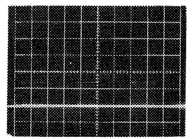

6. IC301 ⑮ 50mVp-p(5mV/20μs div.)

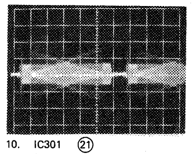

18. IC301 ㊲ 400mVp-p(10mV/10μs div.)

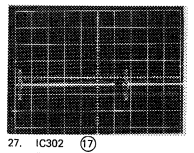

8. IC301 ⑲ 350mVp-p(10mV/10μs div.)

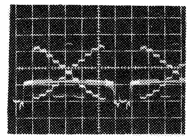

19. IC301 ㊴ 360mVp-p(10mV/10μs div.)

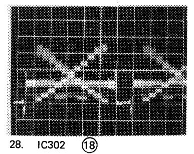

9. IC301 ⑳ 60mVp-p(5mV/5μs div.)

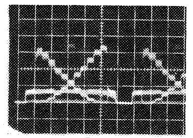

25. IC302 ⑭ 1.2Vp-p(0.1V/5μs div.)

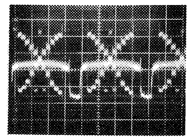

10. IC301 ㉑ 300mVp-p(10mV/10μs div.)

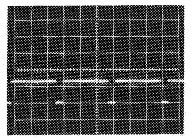

27. IC302 ⑰ 500mVp-p(20mV/10μs div.)

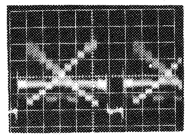

12. IC301 ㉓ (10mV/10μs div.)

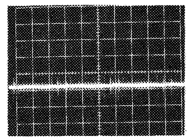

28. IC302 ⑱ 900mVp-p(20mV/10μs div.)

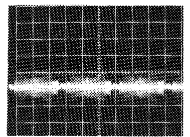

13. IC301 ㉕ 1.8Vp-p(50mV/10μs div.)

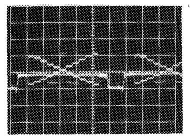

29. IC302 ⑲ (0.2V/1 s div.)

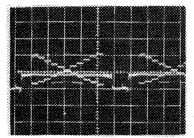

31. IC302 ㉑
0.7Vp-p(50mV/20μs div.)

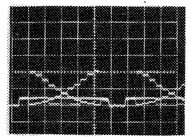

32. IC302 ㉓
1.1Vp-p(20mV/10μs div.)

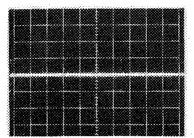

33. IC302 ㉕
100mVp-p(5mV/20μs div.)

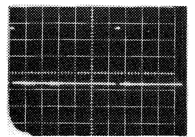

34. IC302 ㉖
40mVp-p(2mV/20μs div.)

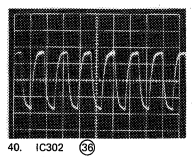

35. IC302 ㉗
130mVp-p(5mV/10μs div.)

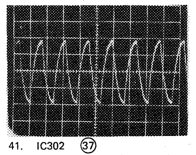

36. IC302 ㉘
130mVp-p(5mV/10μs div.)

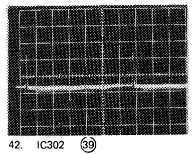

37. IC302 ㉛
120mVp-p(5mV/10μs div.)

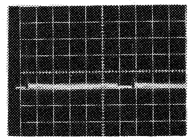

38. IC302 ㉝
100mVp-p(5mV/5μs div.)

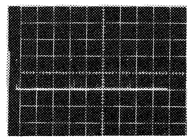

39. IC302 ㉞
1.8Vp-p(50mV/10μs div.)

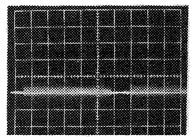

40. IC302 ㊱
700mVp-p(20mV/0.2μs div.)

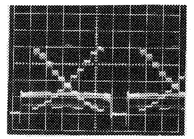

41. IC302 ㊲
800mVp-p(20mV/0.2μs div.)

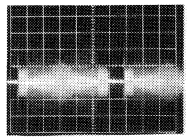

42. IC302 ㊴
500mVp-p(20mV/10μs div.)

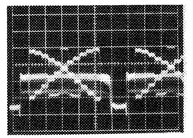

43. IC302 ㊵
600mVp-p(20mV/10μs div.)

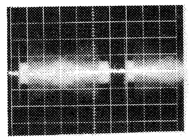

44. IC302 ㊶
900mVp-p(50mV/5μs div.)

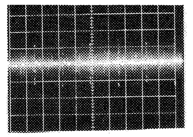

45. IC302 ㊷
200mVp-p(20mV/10μs div.)

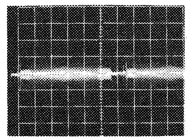

46. IC303 ②
200mVp-p(5mV/10μs div.)

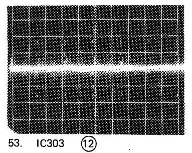

47. IC303 ④
250mVp-p(5mV/10μs div.)

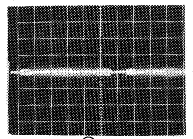

48. IC303 ⑤
200mVp-p(5mV/10μs div.)

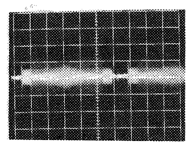

49. IC303 ⑥
80mVp-p(2mV/10μs div.)

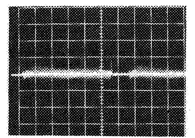

50. IC303 ⑦
250mVp-p(5mV/10μs div.)

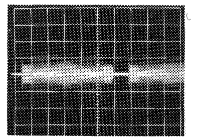

51. IC303 ⑧
100mVp-p(5mV/10μs div.)

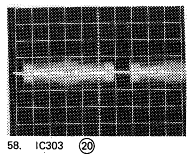

53. IC303 ⑫
200mVp-p(10mV/10μs div.)

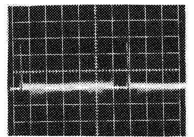

54. IC303 ⑭
80mVp-p(5mV/10μs div.)

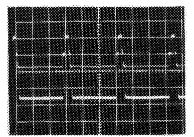

55. IC303 ⑮
150mVp-p(5mV/10μs div.)

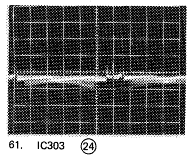

56. IC303 ⑯
400mVp-p(50mV/10μs div.)

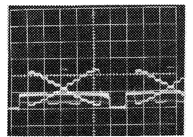

57. IC303 ⑱
1.5Vp-p(50mV/10μs div.)

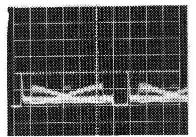

58. IC303 ⑳
1.8Vp-p(50mV/10μs div.)

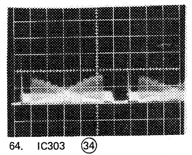

59. IC303 ㉒
200mVp-p(20mV/10μs div.)

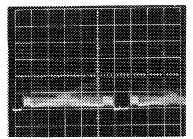

60. IC303 ㉓
4Vp-p(0.1V/20μs div.)

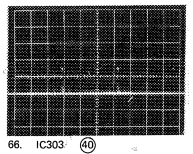

61. IC303 ㉔
200mVp-p(20mV/10μs div.)

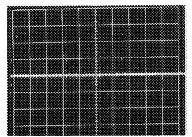

62. IC303 ㉙
250mVp-p(10mV/10μs div.)

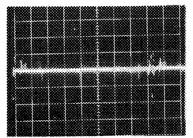

63. IC303 ㉛
400mVp-p(20mV/10μs div.)

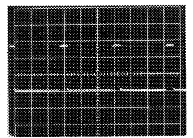

64. IC303 ㉞
600mVp-p(20mV/10μs div.)

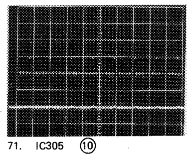

65. IC303 ㊴
400mVp-p(20mV/10μs div.)

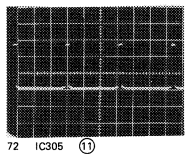

66. IC303 ㊵
700mVp-p(50mV/5ms div.)

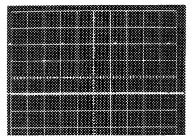

67. IC303 ㊶
100mVp-p(10mV/5ms div.)

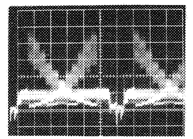

68. IC303 ㊷
1Vp-p(50mV/2μs div.)

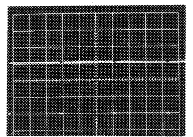

70. IC305 ⑧
5.2Vp-p(0.2V/20μs div.)

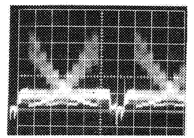

71. IC305 ⑩
5.8Vp-p(0.2V/50μs div.)

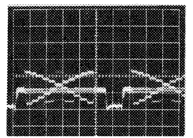

72 IC305 ⑪
5.6Vp-p(0.2V/20μs div.)

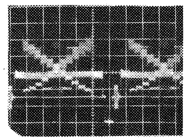

73. IC305 ⑫
6Vp-p(0.2V/20μs div.)

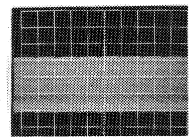

74. IC305
1Vp-p(20mV/10μs div.)

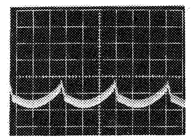

76. IC305 ⑱
6Vp-p(0.2V/20μs div.)

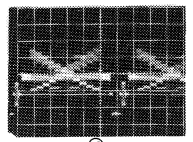

77. TP301
1Vp-p(20mV/10μs div.)

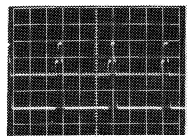

80. TP312
120mVp-p(5mV/10μs div.)


83. TP318
1Vp-p(20mV/10μs div.)

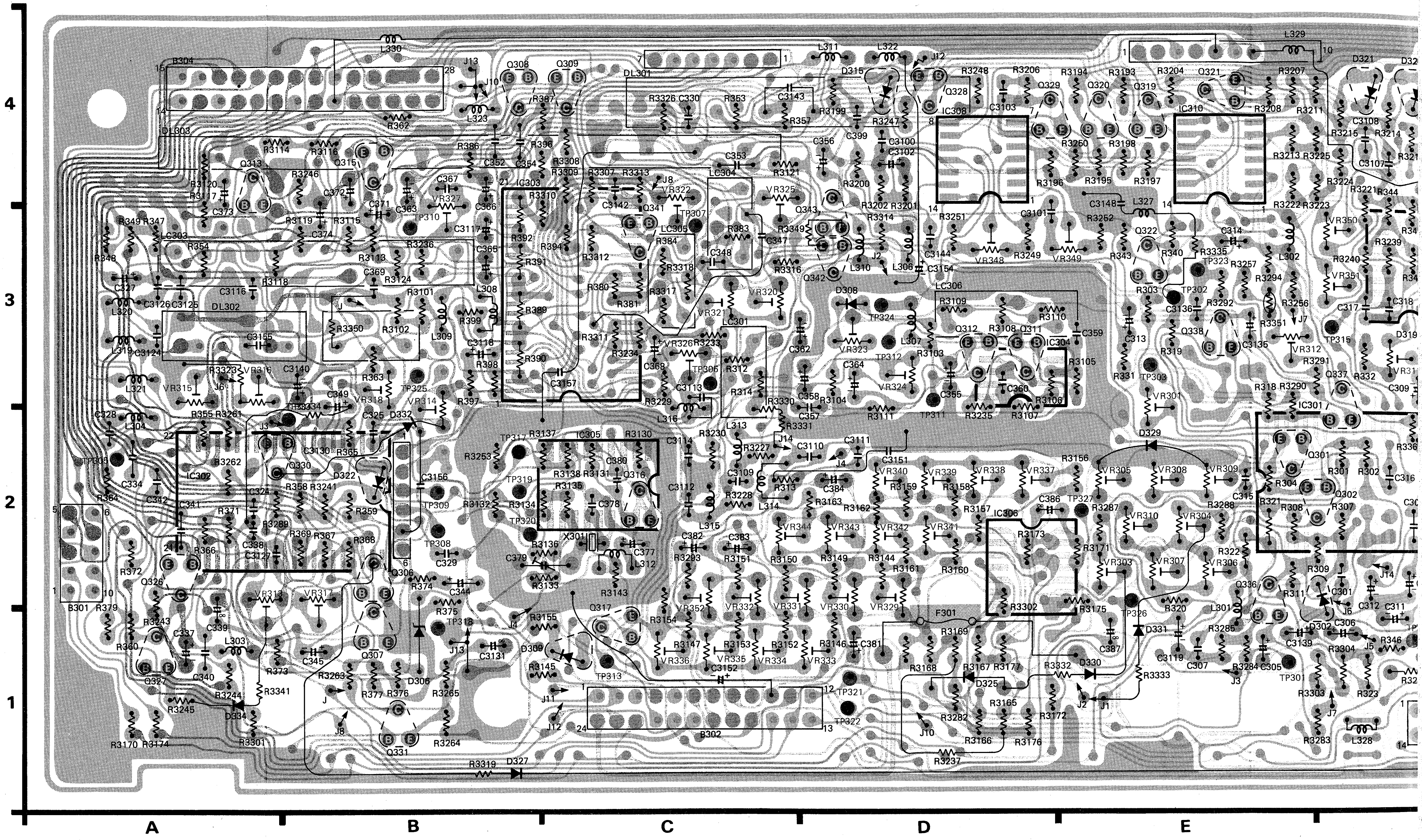

84. TP320
640mVp-p(20mV/50μs div.)


87. TP313
8Vp-p(0.5V/20μs div.)


200. IC302 ⑫
2Vp-p(50mV/10μs div.)


201. IC302 ⑮
3.8Vp-p(0.1V/20μs div.)

PROCESS CIRCUIT BOARD (VEPW 0418)

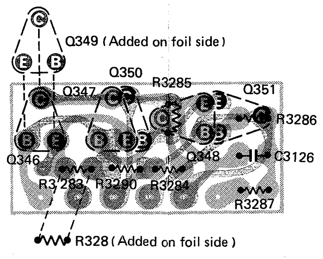

4
3
2
1
A
B
C
D
E
IC302
IC303
IC305
IC306
IC301
IC308
IC310
DL301
DL302
DL303
B301
B302
B304
F301

SPECIAL NOTE All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "Electrostatically Sensitive (ES) Devices" section of this service manual.

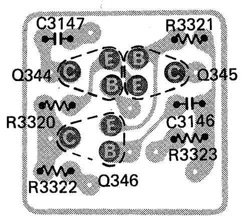
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY SHADE HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

REAR SIDE CIRCU
(V

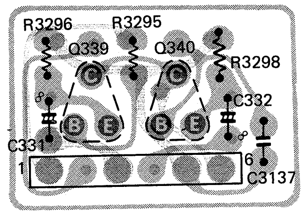
VEPW 0485

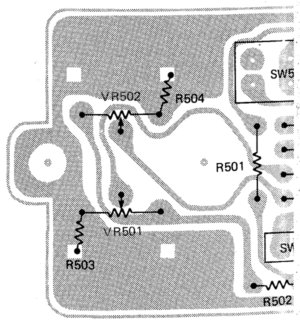

Q349 (Added on foil side)
Q350
R3285
Q351
Q347
R3286
Q346
Q348
C3126
R3283
R3280
R3284
R3287
R328 (Added on foil side)

VEPW 0487

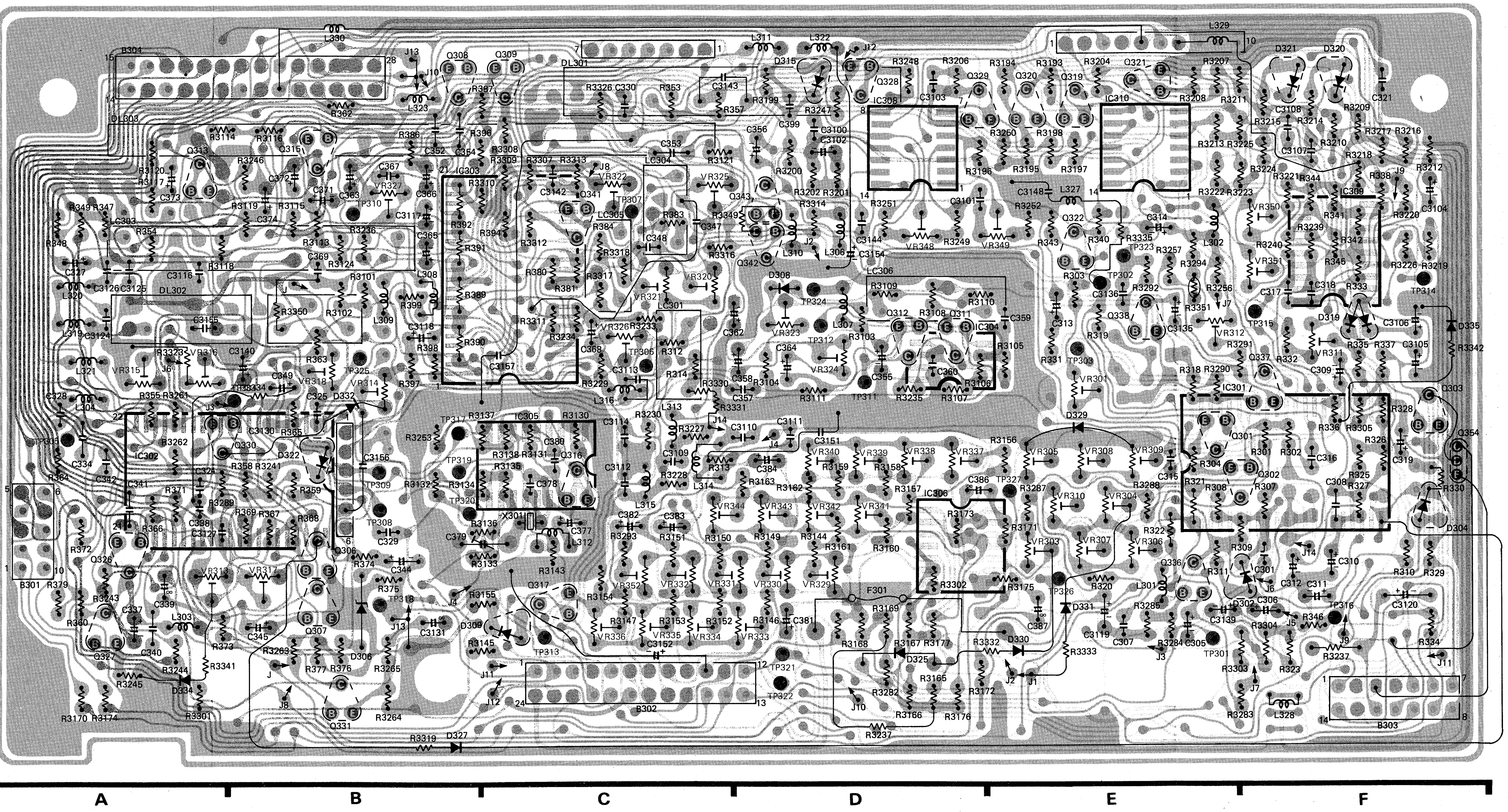

C3147
R3321
Q344
Q345
R3320
C3146
R3323
R3322
Q346

VEPW 0491


R3296
R3295
Q339
Q340
R3298
C332
C331
C3137


VR502
R504
R501
VR501
R503
R502

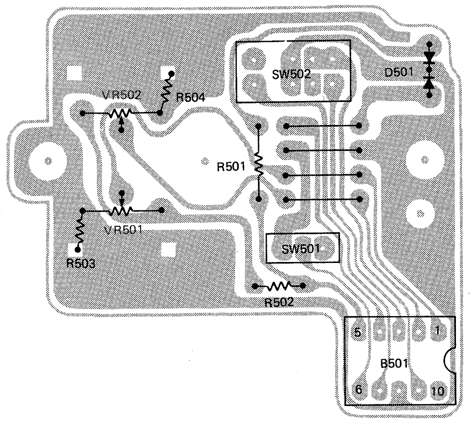
ROCESS CIRCUIT BOARD (VEPW 0418)


B304
B301
B302
B303
IC301
IC302
IC303
IC304
IC305
IC306
IC308
IC309
IC310
F301
X301
A
B
C
D
E
F

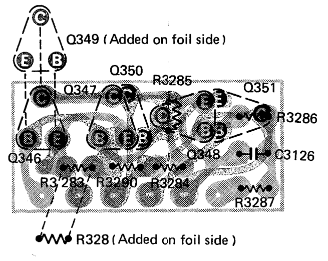
ECIAL NOTE All integrated circuits and many other semiconductor devices are electrostatically sensitive and efore require the special handling techniques described under the "Electrostatically Sensitive (ES) Devices" tion of this service manual.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY SHADE HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

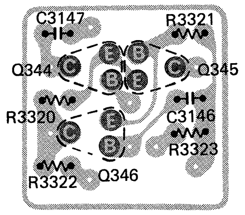
REAR SIDE CIRCUIT BOARD (VEPW 0425)


SW502
D501
VR502
R504
R501
VR501
R503
SW501
R502
B501
5
1
6
10

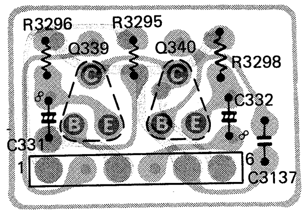
VEPW 0485


Q349 (Added on foil side)
Q350
R3285
Q351
Q347
R3286
Q346
Q348
C3126
R3283
R3280
R3284
R3287
R328 (Added on foil side)

VEPW 0487


C3147
R3321
Q344
Q345
R3320
C3146
R3323
R3322
Q346

VEPW 0491


R3296
R3295
Q339
Q340
R3298
C332
C331
C3137
1
6

B301

1	R/B VR
2	R/B VR
3	STBY SW
4	STBY LED
5	5V
6	N/P SW
7	G UP Ⓛ
8	GND
9	AWB SW
10	

B302

1	NTSC
2	5V
3	
4	AF
5	TP
6	PRE AMP OUT
7	7.5V
8	HP
9	VD
10	7.5V
11	6V
12	VSS
13	IRIS DELAY
14	1.8V
15	5V Ⓑ
16	CP2
17	VS
18	HS
19	GND
20	HD PULSE
21	DYNAMIC.F
22	ABO
23	STANDBY
24	12V

B303

1	GND
2	AUTO AWB
3	PRISET
4	AF
5	FILTER SW
6	5V
7	1.8V
8	IRIS DRIVE
9	IRIS CONT
10	IRIS DRIVE
11	AWB SW
12	12V
13	AF STBY
14	AF GND

B304

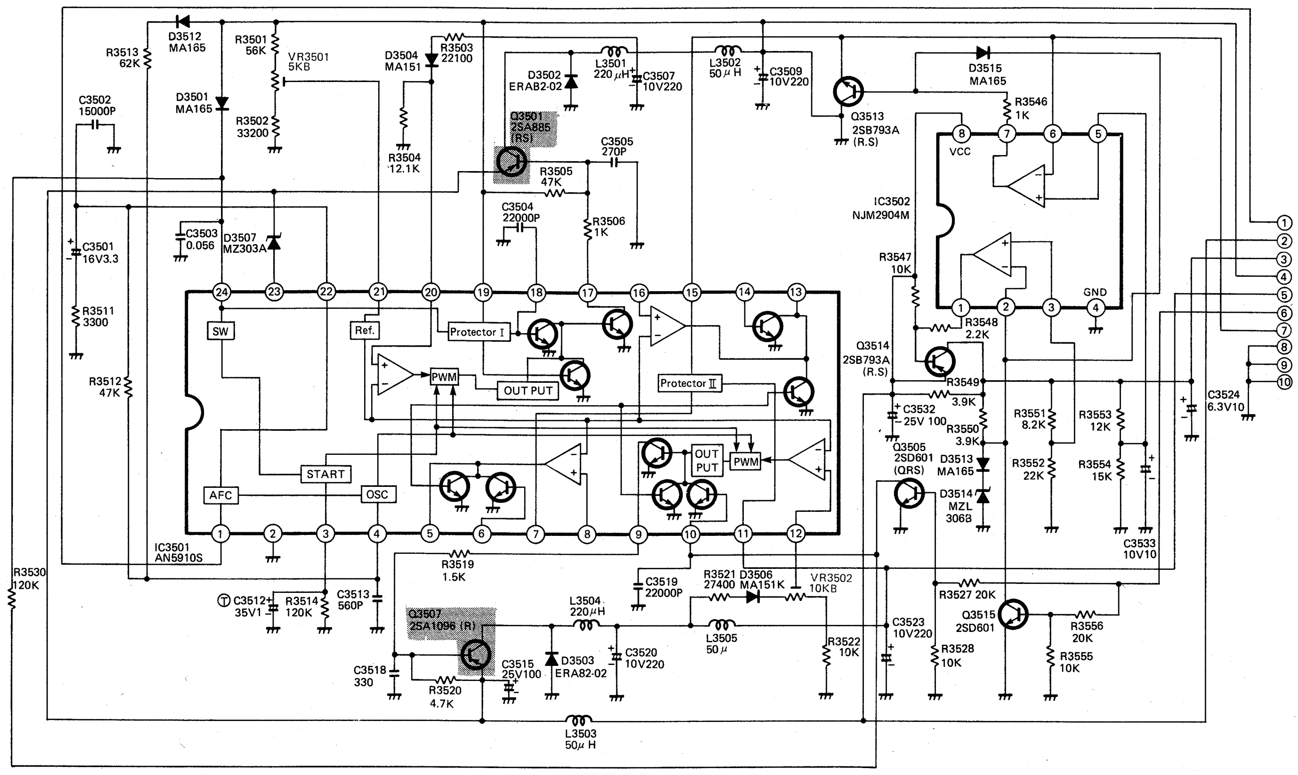
1	AWB 1
2	AWB 2
3	FILTER Ⓗ
4	YC
5	UNDER Ⓗ
6	7.5V
7	EE Ⓗ
8	1.8V
9	G
10	
11	FADE MODE
12	
13	GATE
14	FADE CONT
15	GND
16	STBY LED
17	G UP Ⓛ
18	STBY SW
19	M/S
20	B
21	R
22	IRIS LEVEL
23	12V
24	VCC
25	NTSC
26	GND
27	GND
28	IRIS CONT

Circuit Board

IC301	F-2	VR301	E-3
IC302	B-2	VR303	E-2
IC303	C-3	VR304	E-2
IC304	D-3	VR305	E-2
IC305	C-2	VR306	E-2
IC306	D-2	VR307	E-2
IC308	D-4	VR308	E-2
IC309	F-3	VR309	E-2
IC310	E-4	VR310	E-2
		VR311	F-3
Q301	E-2	VR312	E-3
Q302	F-2	VR313	A-2
Q303	F-2	VR314	B-2
Q306	B-2	VR315	A-3
Q307	B-1	VR316	A-3
Q308	B-4	VR317	B-2
Q309	C-4	VR318	B-3
Q311	D-3	VR320	C-3
Q312	D-3	VR321	C-3
Q313	A-4	VR322	C-4
Q314	A-3	VR323	D-3
Q315	B-4	VR324	D-3
Q316	C-2	VR325	C-4
Q317	C-1	VR326	C-3
Q319	E-4	VR327	B-4
Q320	E-4	VR329	D-2
Q321	E-4	VR330	D-2
Q322	E-3	VR331	C-2
Q323	B-3	VR332	C-2
Q324	A-3	VR333	D-1
Q326	A-2	VR334	C-1
Q327	A-1	VR335	C-1
Q328	D-4	VR336	C-1
Q329	D-4	VR337	D-2
Q330	A-2	VR338	D-2
Q331	B-1	VR339	D-2
Q336	E-2	VR340	D-2
Q337	F-2	VR341	D-2
Q338	E-3	VR342	D-2
Q341	C-3	VR343	D-2
Q342	D-3	VR344	C-2
Q343	D-3	VR348	D-3
		VR349	E-3
D302	F-2	VR350	F-3
D304	F-2	VR352	C-2
D309	C-1	C379	C-2
D315	D-4		
D319	F-3		
D320	F-4		
D321	F-4		
D322	B-2		

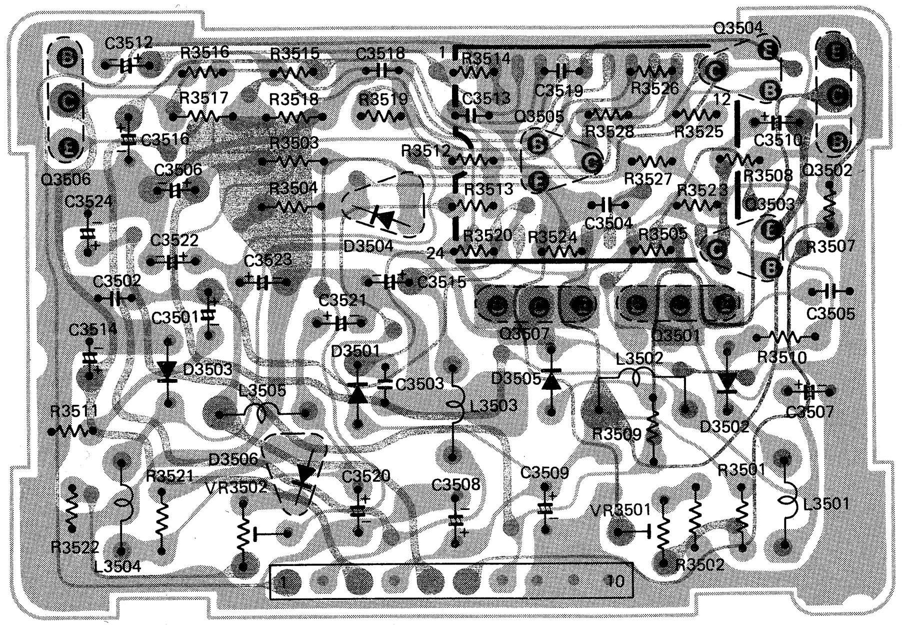
NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

POWER SUPPLY SCHEMATIC DIAGRAM

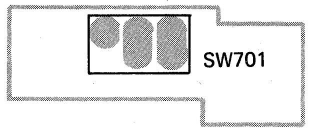

IC3501 AN5910S
IC3502 NJM2904M
Q3501 2SA885 (RS)
Q3507 2SA1096 (R)
Q3513 2SB793A (R.S)
Q3514 2SB793A (R.S)
Q3505 2SD601 (QRS)
Q3515 2SD601
D3501 MA165
D3502 ERAB2-02
D3503 ERAB2-02
D3504 MA151
D3506 MA151K
D3507 MZ303A
D3512 MA165
D3513 MA165
D3514 MZL 3068
D3515 MA165
L3501 220μH
L3502 50μH
L3503 50μH
L3504 220μH
L3505 50μ
VR3501 5K8
VR3502 10KB
SW
Ref.
Protector I
Protector II
PWM
OUT PUT
START
AFC
OSC
VCC
GND
① CP2
② 12V
③ 9V
④ 6V
⑤ 7.5V
⑥ STAND BY
⑦ 5V
⑧ GND
⑨ GND
⑩ GND

POWER SUPPLY CIRCUIT BOARD
(VEPW 0419)

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY SHADE HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.


C3512
R3516
R3515
C3518
R3514
C3519
R3526
Q3504
R3517
R3518
R3519
C3513
Q3505
R3528
R3525
C3510
C3516
R3503
R3512
R3527
R3508
Q3502
Q3506
C3506
R3504
R3513
R3523
Q3503
C3524
D3504
R3520
R3524
C3504
R3505
R3507
C3522
C3523
24
12
C3502
C3515
C3501
C3521
Q3507
Q3501
C3505
C3514
D3501
D3505
L3502
R3510
D3503
C3503
L3503
R3509
D3502
C3507
R3511
D3506
L3505
R3521
VR3502
C3520
C3508
C3509
VR3501
R3501
L3501
R3522
L3504
R3502
1
10

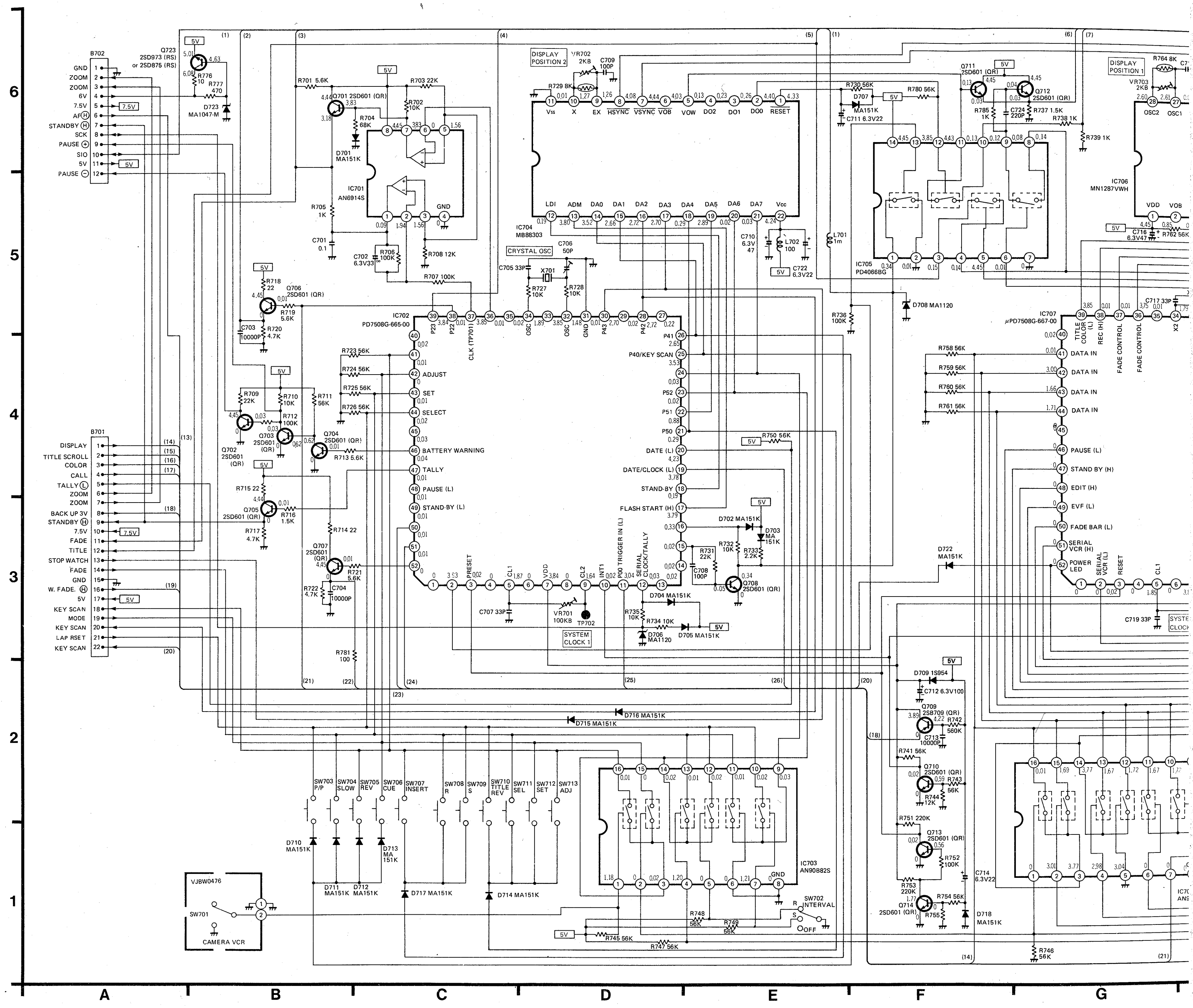
VCR/CAMERA SW
CIRCUIT BOARD
(VEPW 0476)



SPECIAL NOTE All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "Electrostatically Sensitive (ES) Devices" section of this service manual.

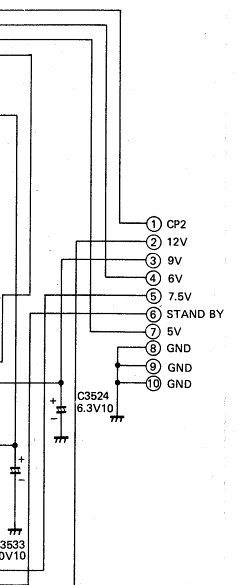
NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

MICRO PROCESSOR SCHEMATIC DIAGRAM

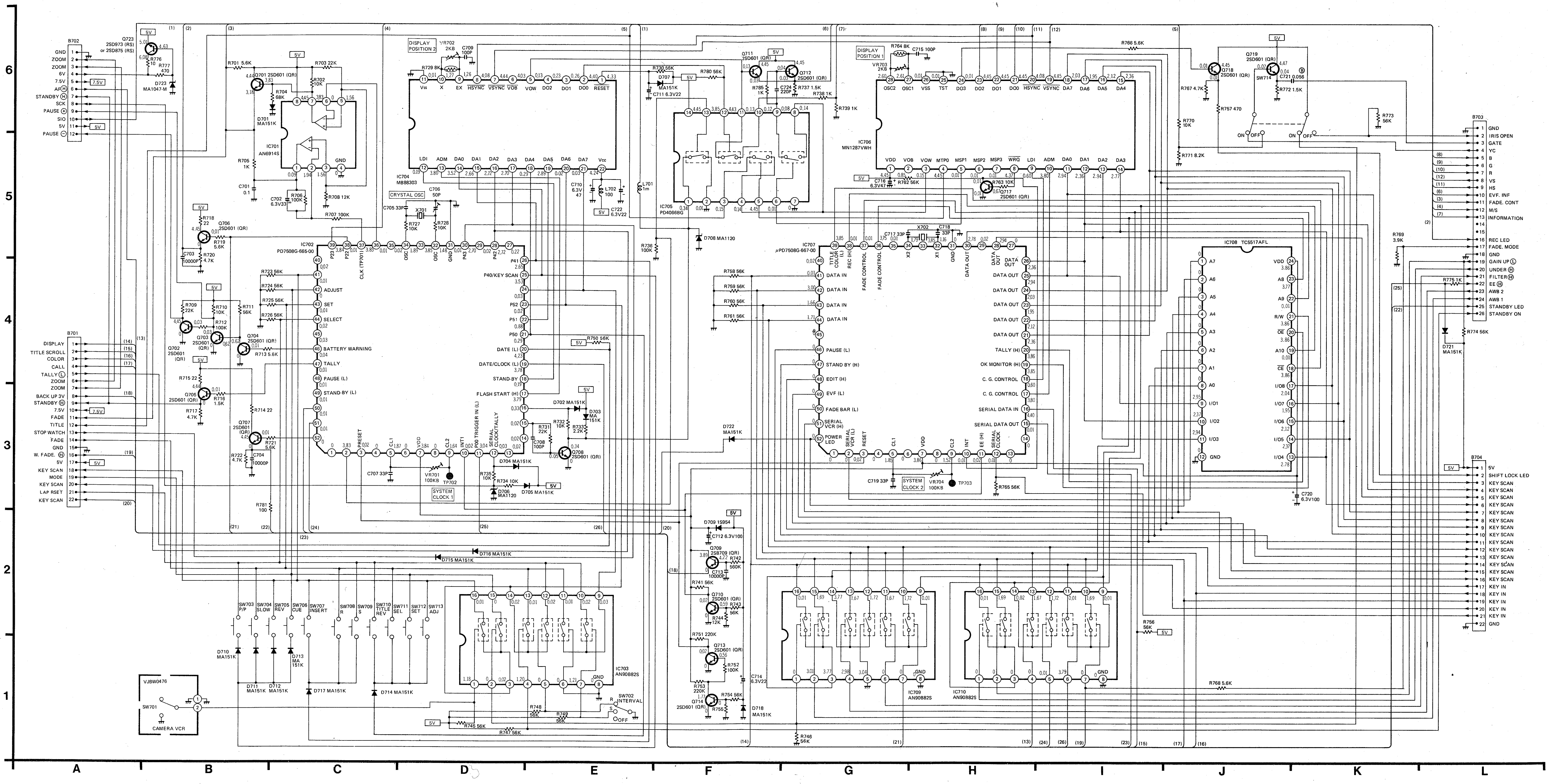

6
5
4
3
2
1
A
B
C
D
E
F
G
B702
GND
ZOOM
ZOOM
6V
7.5V
AF
STANDBY
SCK
PAUSE
SIO
5V
PAUSE
B701
DISPLAY
TITLE SCROLL
COLOR
CALL
TALLY
ZOOM
ZOOM
BACK UP 3V
STANDBY
7.5V
FADE
TITLE
STOP WATCH
FADE
GND
W. FADE
5V
KEY SCAN
MODE
KEY SCAN
LAP RSET
KEY SCAN
Q723 2SD973 (RS) or 2SD875 (RS)
D723 MA1047-M
Q701 2SD601 (QR)
IC701 AN6914S
D701 MA151K
IC702 PD7508G-665-00
IC704 MB88303
CRYSTAL OSC
X701
IC705 PD4066BG
IC706 MN1287VWH
IC707 μPD7508G-667-00
IC703 AN90B82S
DISPLAY POSITION 2
DISPLAY POSITION 1
ADJUST
SET
SELECT
BATTERY WARNING
TALLY
PAUSE (L)
STAND BY (L)
DATE (L)
DATE/CLOCK (L)
STAND-BY
FLASH START (H)
P40/KEY SCAN
DATA IN
PAUSE (L)
STAND BY (H)
EDIT (H)
EVF (L)
FADE BAR (L)
SERIAL VCR (H)
POWER LED
SYSTEM CLOCK 1
VR701 100KB
TP702
SW701
CAMERA VCR
VJBW0476
SW702 INTERVAL
OFF
SW703 P/P
SW704 SLOW
SW705 REV
SW706 CUE
SW707 INSERT
SW708 R
SW709 S
SW710 TITLE REV
SW711 SEL
SW712 SET
SW713 ADJ
D715 MA151K
D716 MA151K
D717 MA151K
D714 MA151K
D708 MA1120
D709 1S954
D722 MA151K
D718 MA151K
Q709 2SB709 (QR)
Q710 2SD601 (QR)
Q711 2SD601 (QR)
Q712 2SD601 (QR)
Q713 2SD601 (QR)
Q714 2SD601 (QR)

MICRO PROCESSOR SCHEMATIC DIAGRAM

1	⊣⊢Ⓜ	MYLAR CAPACITOR
2	⊣⊢Ⓝ	NON POLARITY CAPACITOR
3	⊣⊢Ⓣ	TANTALUM CAPACITOR



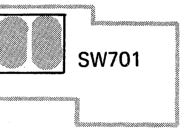
① CP2
② 12V
③ 9V
④ 6V
⑤ 7.5V
⑥ STAND BY
⑦ 5V
⑧ GND
⑨ GND
⑩ GND
C3524 6.3V10
3533
0V10



6
5
4
3
2
1
A
B
C
D
E
F
G
H
I
J
K
L
B702
GND
ZOOM
ZOOM
6V
7.5V
AF Ⓗ
STANDBY Ⓗ
SCK
PAUSE Ⓛ
SIO
5V
PAUSE Ⓛ
Q723 2SD973 (RS) or 2SD875 (RS)
D723 MA1047-M
Q701 2SD601 (QR)
D701 MA151K
IC701 AN6914S
DISPLAY POSITION 2
IC704 MB88303
CRYSTAL OSC
X701
IC702 PD7508G-665-00
P41
P40/KEY SCAN
P52
P51
P50
DATE (L)
DATE/CLOCK (L)
STAND-BY
FLASH START (H)
ADJUST
SET
SELECT
BATTERY WARNING
TALLY
PAUSE (L)
STAND BY (L)
PRESET
CL1
VDD
CL2
INT1
TRIGGER IN (L)
SERIAL CLOCK/TALLY
Q702 2SD601 (QR)
Q703 2SD601 (QR)
Q704 2SD601 (QR)
Q705 2SD601 (QR)
Q706 2SD601 (QR)
Q707 2SD601 (QR)
Q708 2SD601 (QR)
D702 MA151K
D703 MA151K
D704 MA151K
D705 MA151K
D706 MA1120
VR701 100KB
TP702
SYSTEM CLOCK 1
B701
DISPLAY
TITLE SCROLL
COLOR
CALL
TALLY Ⓛ
ZOOM
ZOOM
BACK UP 3V
STANDBY Ⓗ
7.5V
FADE
TITLE
STOP WATCH
FADE
GND
W. FADE. Ⓗ
5V
KEY SCAN
MODE
KEY SCAN
LAP RSET
KEY SCAN
Q711 2SD601 (QR)
Q712 2SD601 (QR)
D707 MA151K
IC705 PD4066BG
L701 1m
D708 MA1120
D716 MA151K
D715 MA151K
SW703 P/P
SW704 SLOW
SW705 REV
SW706 CUE
SW707 INSERT
SW708 R
SW709 S
SW710 TITLE REV
SW711 SEL
SW712 SET
SW713 ADJ
D710 MA151K
D711 MA151K
D712 MA151K
D713 MA 151K
D717 MA151K
D714 MA151K
IC703 AN90B82S
VJBW0476
SW701
CAMERA VCR
SW702 INTERVAL
OFF
D709 1S954
Q709 2SB709 (QR)
Q710 2SD601 (QR)
Q713 2SD601 (QR)
Q714 2SD601 (QR)
D718 MA151K
D722 MA151K
DISPLAY POSITION 1
VR703 2K8
IC706 MN1287VWH
OSC2
OSC1
VSS
TST
DO3
DO2
DO1
DO0
HSYNC
VSYNC
DA7
DA6
DA5
DA4
VDD
VOB
VOW
MTP0
MSP1
MSP2
MSP3
WRQ
LDI
ADM
DA0
DA1
DA2
DA3
Q717 2SD601 (QR)
IC707 μPD7508G-667-00
X702
TITLE COLOR
REC (H)
FADE CONTROL
FADE CONTROL
X2
X1
GND
DATA OUT
DATA IN
DATA OUT
PAUSE (L)
STAND BY (H)
EDIT (H)
EVF (L)
FADE BAR (L)
SERIAL VCR (H)
POWER LED
RESET
CL1
VDD
CL2
EE (H)
INT
SERIAL CLOCK
TALLY (H)
OK MONITOR (H)
C. G. CONTROL
C.G. CONTROL
SERIAL DATA IN
SERIAL DATA OUT
SYSTEM CLOCK 2
VR704 100KB
TP703
IC709 AN90B82S
IC710 AN90B82S
Q718 2SD601 (QR)
Q719 2SD601 (QR)
SW714
ON
OFF
IC708 TC5517AFL
A7
A6
A5
A4
A3
A2
A1
A0
I/O1
I/O2
I/O3
GND
VDD
A8
A9
R/W
OE
A10
CE
I/O8
I/O7
I/O6
I/O5
I/O4
D721 MA151K
B703
GND
IRIS OPEN
GATE
YC
B
G
R
VS
HS
EVF. INF
FADE. CONT
M/S
INFORMATION
REC LED
FADE. MODE
GND
GAIN UP Ⓛ
UNDER Ⓗ
FILTER Ⓗ
EE Ⓗ
AWB 2
AWB 1
STANDBY LED
STANDBY ON
B704
5V
SHIFT LOCK LED
KEY SCAN
KEY IN
GND

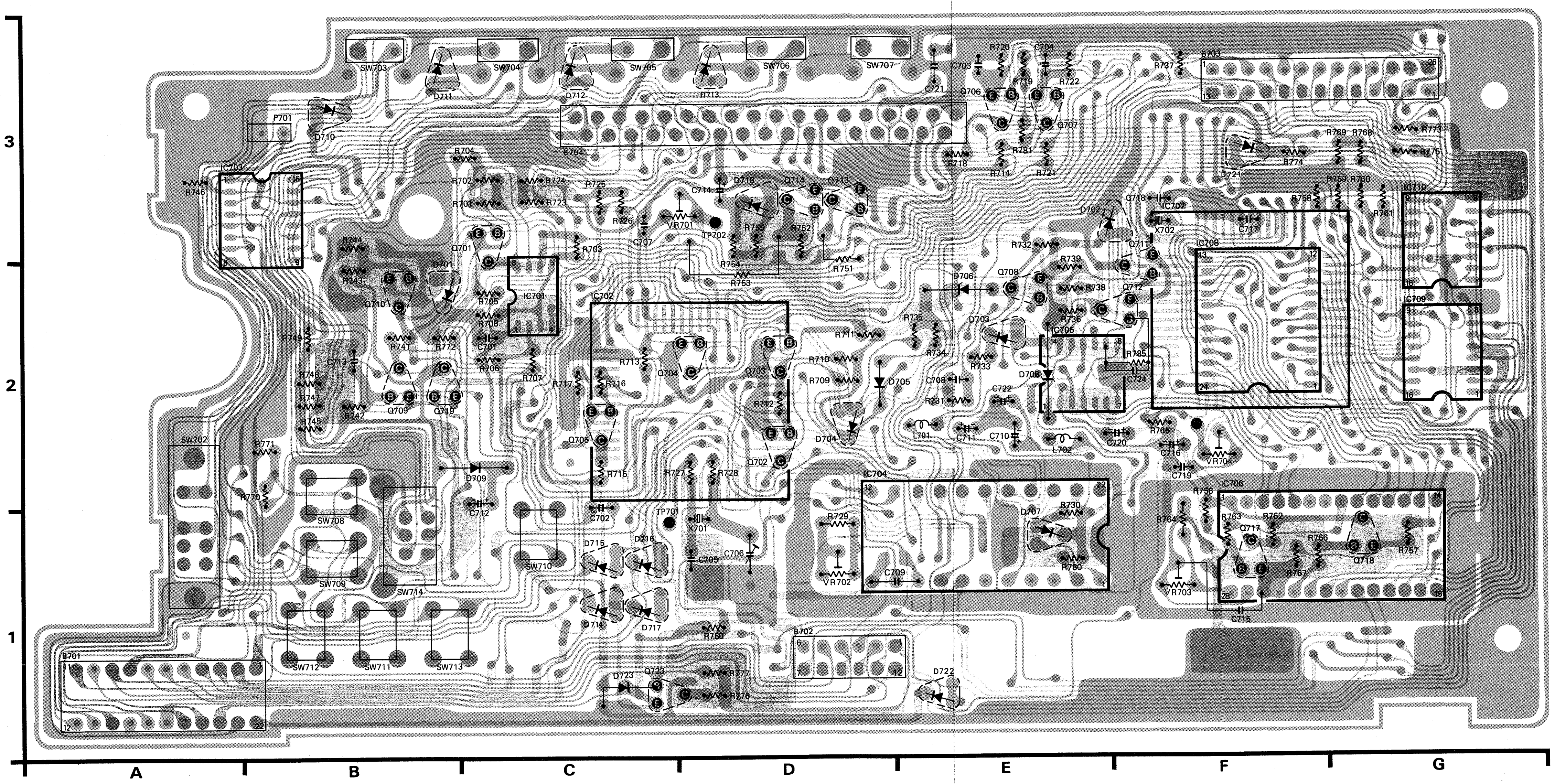
SHADE HAVE SPECIAL
T FOR SAFETY.
HESE COMPONENTS, USE ONLY THE

MERA SW
JIT BOARD
VEPW 0476)



T NUMBER SHOWN ON THIS DRAWING FOR
RECT PART NUMBER IS SHOWN IN THE
BE SLIGHTLY DIFFERENT OR AMENDED
WAS PREPARED.

MICRO PROCESSOR CIRCUIT BOARD (VEPW 0421)



3
2
1
A
B
C
D
E
F
G
SW703
SW704
SW705
SW706
SW707
SW702
SW708
SW709
SW710
SW711
SW712
SW713
SW714
P701
B701
B702
B703
B704
IC701
IC702
IC703
IC704
IC705
IC706
IC707
IC708
IC709
IC710
TP701
TP702
X701
X702
VR701
VR702
VR703
VR704
L701
L702

P701	
1	GND
2	CAMERA & VCR

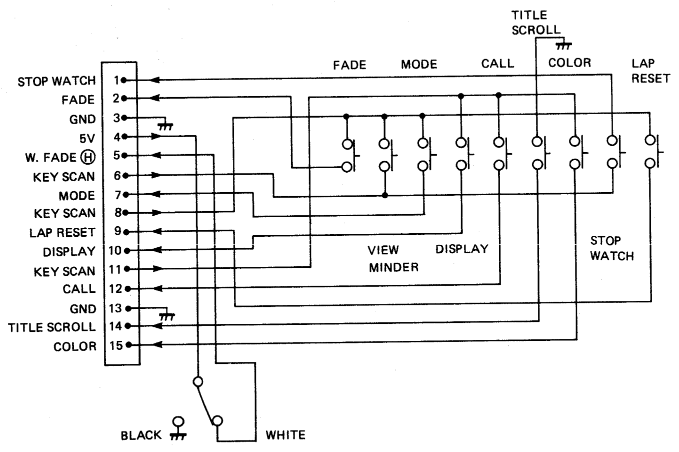
B701	
1	IC707 P10
2	IC707 P13
3	IC707 P12
4	IC707 P11
5	TRIG Ⓛ
6	ZOOM
7	ZOOM
8	BACK UP 3V
9	STBY Ⓗ
10	7.5V
11	FADE
12	TITLE
13	IC702 P43
14	IC702 P12
15	GND
16	W. FADE Ⓗ
17	5V
18	IC702 P10
19	IC702 P11
20	IC702 P42
21	IC702 P13
22	IC702 P72

B702	
1	GND
2	ZOOM
3	ZOOM
4	6V
5	7.5V
6	AF
7	STANDBY
8	SCK
9	PAUSE ⊕
10	SIO
11	5V
12	PAUSE ⊖

B703	
1	GND
2	IRIS CONT
3	GATE
4	YC
5	B
6	G
7	R
8	VS
9	HS
10	EVF INF
11	FADE CONT
12	M/S
13	
14	
15	
16	REC LED
17	FADE MODE
18	GND
19	G UP Ⓛ
20	UNDER Ⓗ
21	FILTER Ⓗ
22	EE Ⓗ
23	AWB 2
24	AWB 1
25	STBY LED
26	STBY ON

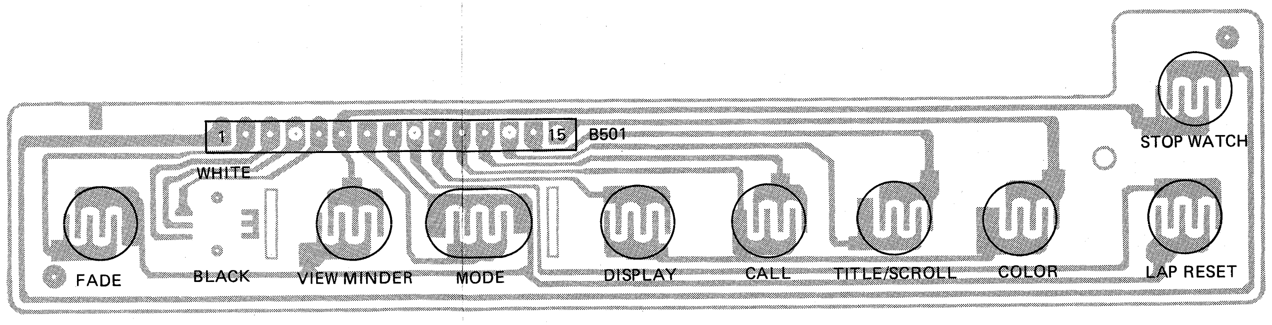
B704	
1	5V
2	SHIFT LOCK
3	KEY SCAN
4	KEY SCAN
5	KEY SCAN
6	KEY SCAN
7	KEY SCAN
8	KEY SCAN
9	KEY SCAN
10	KEY SCAN
11	KEY SCAN
12	KEY SCAN
13	KEY SCAN
14	KEY SCAN
15	KEY SCAN
16	KEY SCAN
17	KEY IN
18	KEY IN
19	KEY IN
20	KEY IN
21	ALL CLEAR
22	GND

FRONT OPERATION SCHEMATIC DIAGRAM



TITLE SCROLL
FADE
MODE
CALL
COLOR
LAP RESET
STOP WATCH 1
FADE 2
GND 3
5V 4
W. FADE Ⓗ 5
KEY SCAN 6
MODE 7
KEY SCAN 8
LAP RESET 9
DISPLAY 10
KEY SCAN 11
CALL 12
GND 13
TITLE SCROLL 14
COLOR 15
VIEW MINDER
DISPLAY
STOP WATCH
BLACK
WHITE

FRONT OPERATION CIRCUIT BOARD (VEPW 0424)



1
15
B501
WHITE
STOP WATCH
FADE
BLACK
VIEW MINDER
MODE
DISPLAY
CALL
TITLE/SCROLL
COLOR
LAP RESET

SPECIAL NOTE All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "Electrostatically Sensitive (ES) Devices" section of this service manual.

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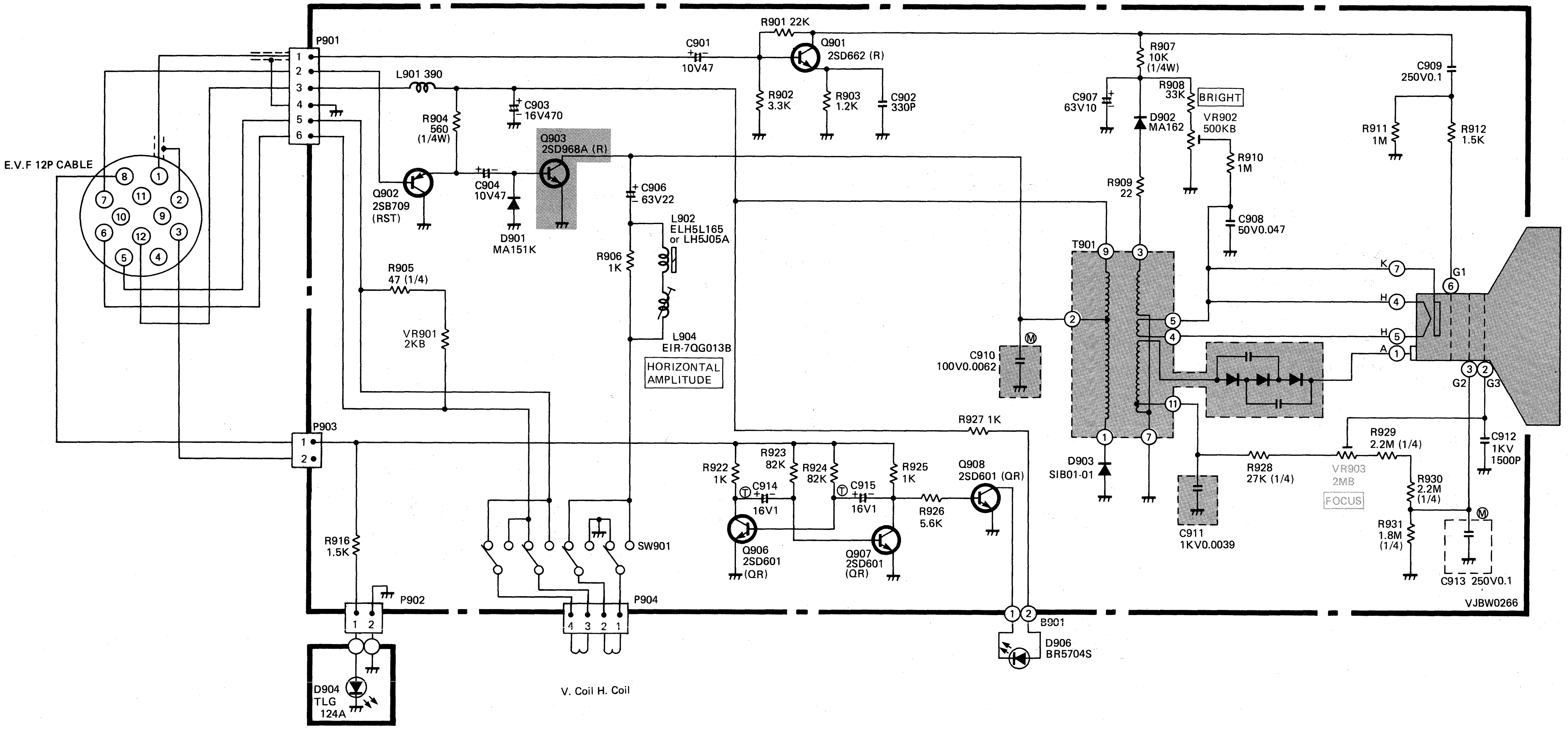
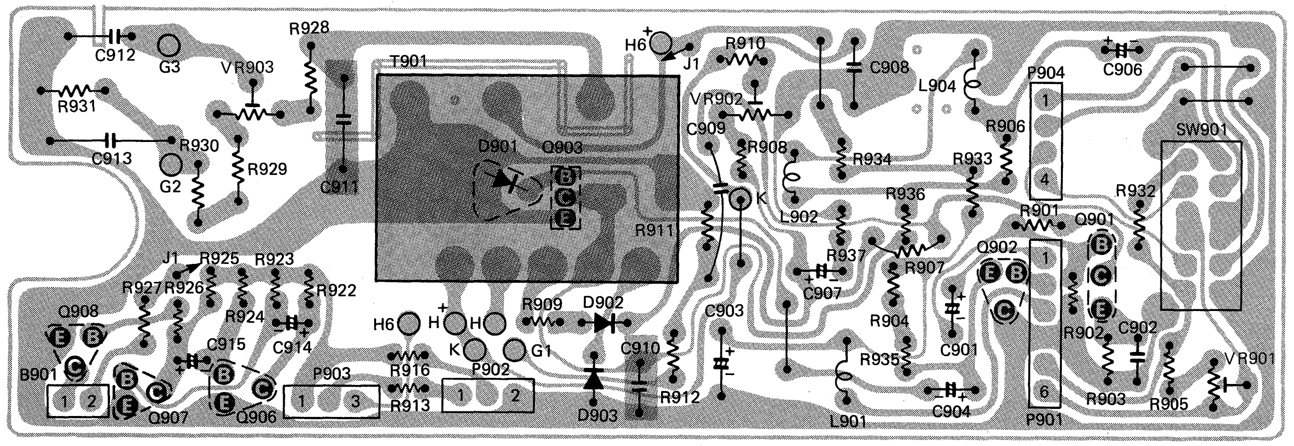
ELECTRONIC VIEWFINDER SCHEMATIC DIAGRAM

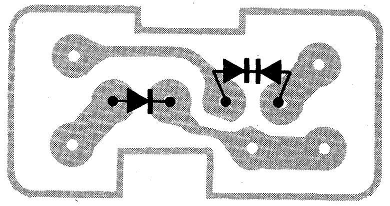

E.V.F 12P CABLE
P901
P903
P902
P904
L901 390
R904 560 (1/4W)
C903 16V470
Q903 2SD968A (R)
Q902 2SB709 (RST)
C904 10V47
D901 MA151K
R905 47 (1/4)
VR901 2KB
C901 10V47
R901 22K
Q901 2SD662 (R)
R902 3.3K
R903 1.2K
C902 330P
C906 63V22
L902 ELH5L165 or LH5J05A
R906 1K
L904 EIR-7QG013B
HORIZONTAL AMPLITUDE
R916 1.5K
SW901
D904 TLG 124A
V. Coil H. Coil
R907 10K (1/4W)
R908 33K
BRIGHT
VR902 500KB
C907 63V10
D902 MA162
R910 1M
R909 22
C908 50V0.047
T901
C910 100V0.0062
R927 1K
R922 1K
R923 82K
R924 82K
R925 1K
C914 16V1
C915 16V1
R926 5.6K
Q906 2SD601 (QR)
Q907 2SD601 (QR)
Q908 2SD601 (QR)
D903 SIB01-01
C911 1KV0.0039
R928 27K (1/4)
VR903 2MB
FOCUS
R929 2.2M (1/4)
R930 2.2M (1/4)
R931 1.8M (1/4)
C912 1KV 1500P
C913 250V0.1
C909 250V0.1
R911 1M
R912 1.5K
G1
G2
G3
K
H
A
B901
D906 BR5704S
VJBW0266

ELECTRONIC VIEWFINDER CIRCUIT BOARD (VEPW 0266 B)


C912
G3
VR903
R928
T901
R931
C913
R930
R929
G2
C911
D901
Q903
R911
J1
R925
R923
R927
R926
R922
Q908
R924
C915
C914
B901
Q907
Q906
P903
R916
R913
P902
D903
C910
R912
H6
H
K
G1
R909
D902
C903
R910
VR902
C909
R908
L902
R937
C907
R907
R904
R935
L901
C904
C908
L904
R934
R936
R933
R906
P904
C906
SW901
R901
Q901
Q902
R902
C902
R903
R905
VR901
C901
P901
R932

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY SHADE HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

E.V.F. LED CIRCUIT BOARD
(VEPW 0261)



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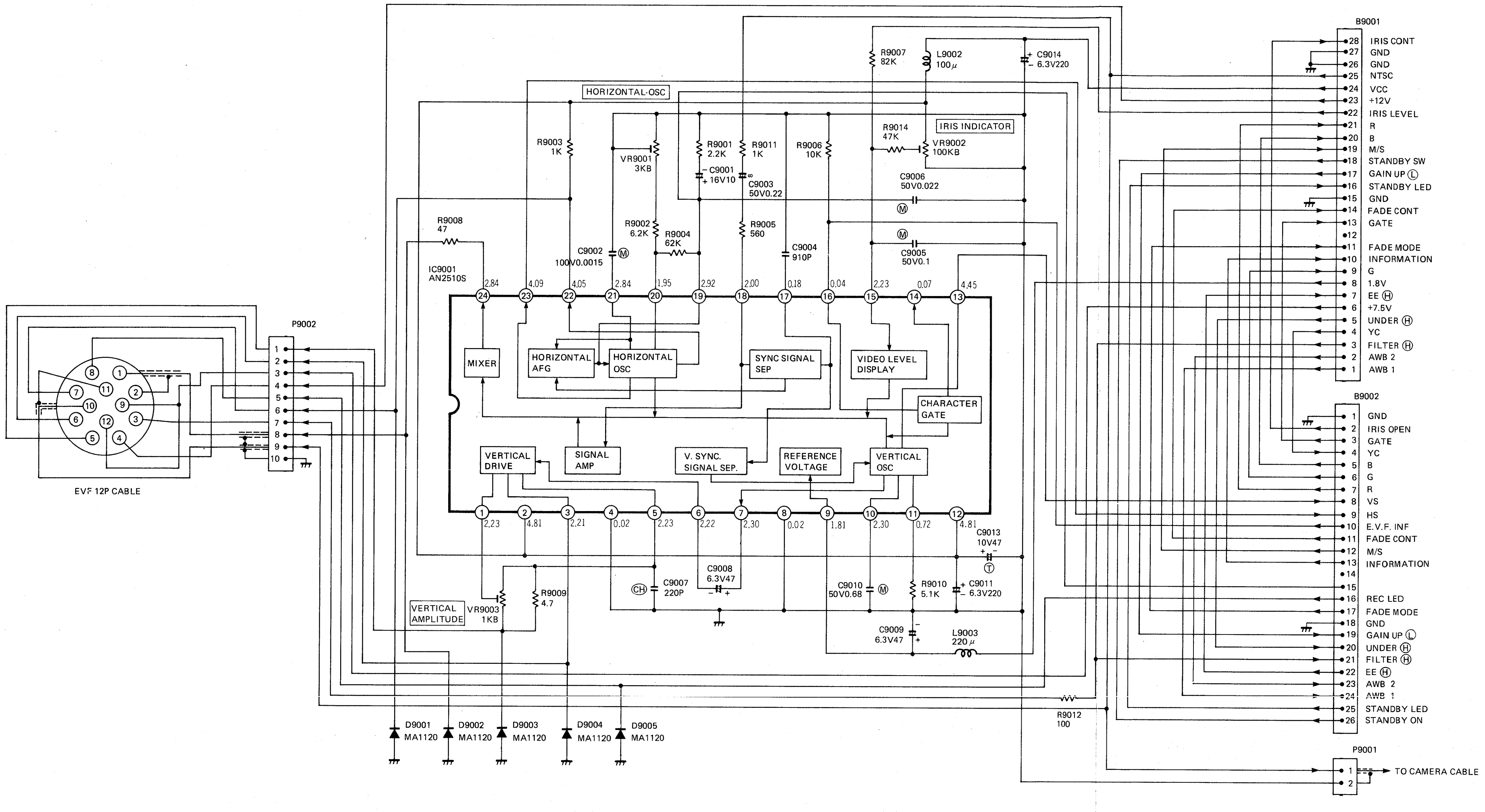
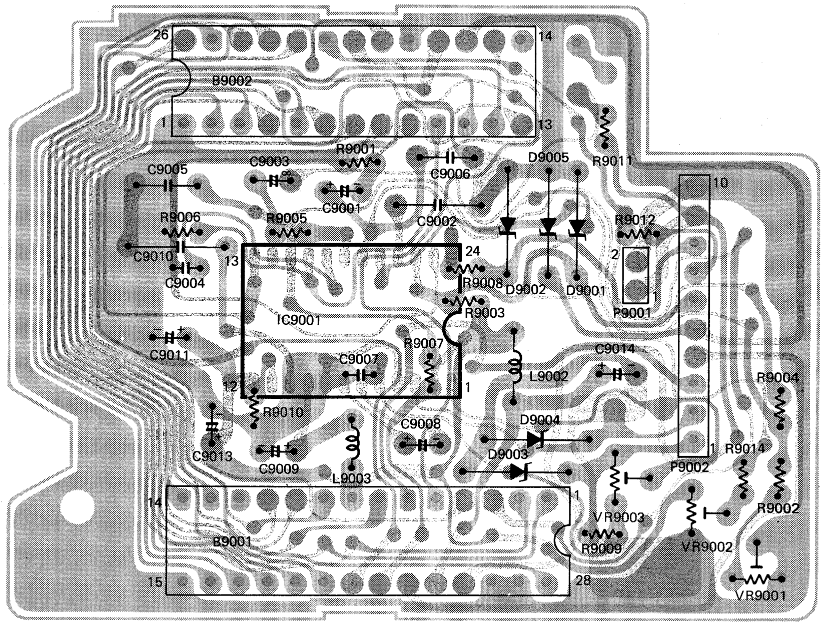
ELECTRONIC VIEWFINDER RELAY SCHEMATIC DIAGRAM



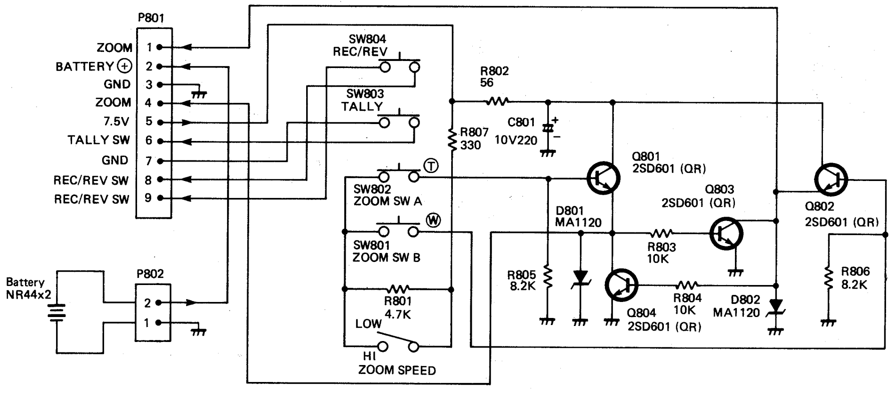
HORIZONTAL-OSC
IRIS INDICATOR
IC9001 AN2510S
MIXER
HORIZONTAL AFG
HORIZONTAL OSC
SYNC SIGNAL SEP
VIDEO LEVEL DISPLAY
CHARACTER GATE
VERTICAL DRIVE
SIGNAL AMP
V. SYNC. SIGNAL SEP.
REFERENCE VOLTAGE
VERTICAL OSC
VERTICAL AMPLITUDE
VR9003 1KB
R9009 4.7
R9008 47
R9003 1K
VR9001 3KB
R9001 2.2K
R9011 1K
R9006 10K
R9002 6.2K
R9004 62K
R9005 560
C9001 16V10
C9002 100V0.0015
C9003 50V0.22
C9004 910P
R9007 82K
L9002 100μ
C9014 6.3V220
R9014 47K
VR9002 100KB
C9006 50V0.022
C9005 50V0.1
C9007 220P
C9008 6.3V47
C9010 50V0.68
R9010 5.1K
C9011 6.3V220
C9013 10V47
C9009 6.3V47
L9003 220μ
R9012 100
D9001 MA1120
D9002 MA1120
D9003 MA1120
D9004 MA1120
D9005 MA1120
P9002
EVF 12P CABLE
B9001
28 IRIS CONT
27 GND
26 GND
25 NTSC
24 VCC
23 +12V
22 IRIS LEVEL
21 R
20 B
19 M/S
18 STANDBY SW
17 GAIN UP Ⓛ
16 STANDBY LED
15 GND
14 FADE CONT
13 GATE
12
11 FADE MODE
10 INFORMATION
9 G
8 1.8V
7 EE Ⓗ
6 +7.5V
5 UNDER Ⓗ
4 YC
3 FILTER Ⓗ
2 AWB 2
1 AWB 1
B9002
1 GND
2 IRIS OPEN
3 GATE
4 YC
5 B
6 G
7 R
8 VS
9 HS
10 E.V.F. INF
11 FADE CONT
12 M/S
13 INFORMATION
14
15
16 REC LED
17 FADE MODE
18 GND
19 GAIN UP Ⓛ
20 UNDER Ⓗ
21 FILTER Ⓗ
22 EE Ⓗ
23 AWB 2
24 AWB 1
25 STANDBY LED
26 STANDBY ON
P9001
TO CAMERA CABLE

ELECTRONIC VIEWFINDER RELAY CIRCUIT BOARD (VEPW 0423)



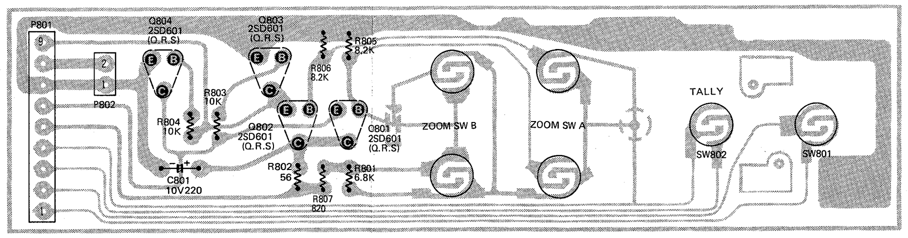
B9002
B9001
IC9001
P9001
P9002
C9005
C9003
R9001
C9006
D9005
R9011
R9006
R9005
C9001
C9002
R9012
C9010
C9004
R9008
D9002
D9001
R9003
C9011
C9007
R9007
C9014
L9002
R9004
R9010
C9008
D9004
C9013
C9009
L9003
D9003
R9014
VR9003
R9009
VR9002
R9002
VR9001

POWER ZOOM SW SCHEMATIC DIAGRAM



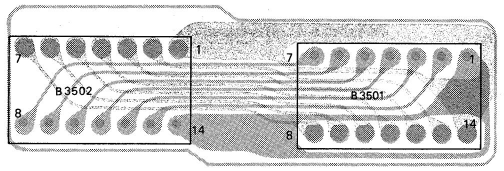
P801
ZOOM
BATTERY ⊕
GND
ZOOM
7.5V
TALLY SW
GND
REC/REV SW
REC/REV SW
SW804 REC/REV
SW803 TALLY
SW802 ZOOM SW A
SW801 ZOOM SW B
R802 56
R807 330
C801 10V220
Q801 2SD601 (QR)
Q803 2SD601 (QR)
Q802 2SD601 (QR)
Q804 2SD601 (QR)
D801 MA1120
D802 MA1120
R803 10K
R804 10K
R805 8.2K
R806 8.2K
R801 4.7K
LOW
HI
ZOOM SPEED
Battery NR44x2
P802

POWER ZOOM SW CIRCUIT BOARD
(VEPW 0260 A)



P801
P802
Q804 2SD601 (Q.R.S)
Q803 2SD601 (Q.R.S)
R805 8.2K
R806 8.2K
R803 10K
R804 10K
Q802 2SD601 (Q.R.S)
Q801 2SD601 (Q.R.S)
C801 10V220
R802 56
R801 6.8K
R807 820
ZOOM SW B
ZOOM SW A
TALLY
SW802
SW801

CONNECTOR CIRCUIT BOARD
(VEPW 0427)

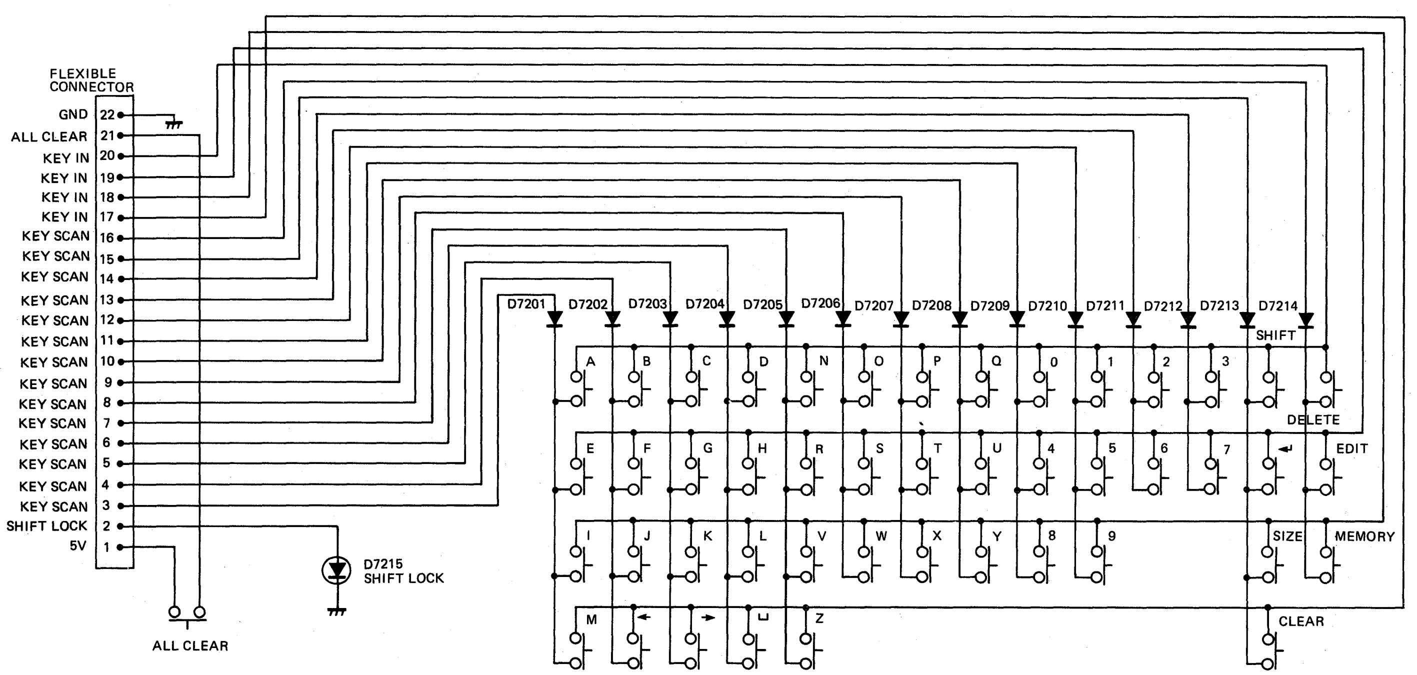


7
1
8
14
B3502
B3501

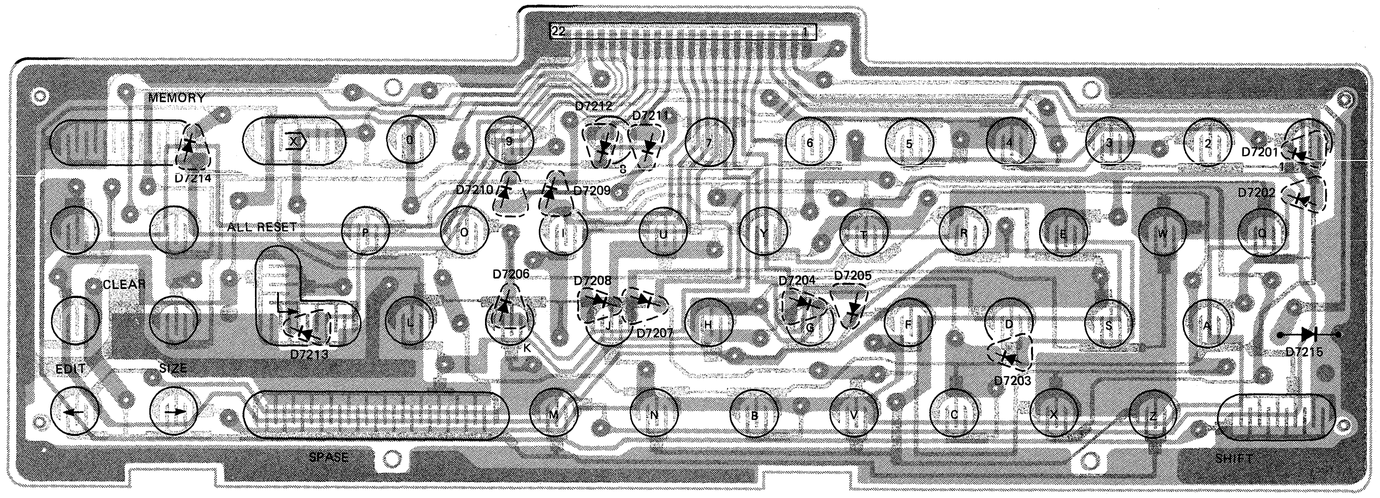
SPECIAL NOTE All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "Electrostatically Sensitive (ES) Devices" section of this service manual.

NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

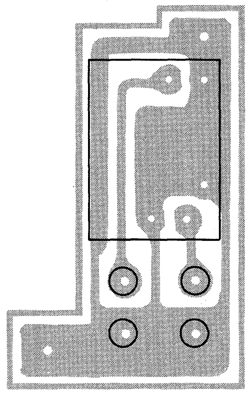
KEY BOARD SCHEMATIC DIAGRAM


FLEXIBLE CONNECTOR
GND 22
ALL CLEAR 21
KEY IN 20
KEY IN 19
KEY IN 18
KEY IN 17
KEY SCAN 16
KEY SCAN 15
KEY SCAN 14
KEY SCAN 13
KEY SCAN 12
KEY SCAN 11
KEY SCAN 10
KEY SCAN 9
KEY SCAN 8
KEY SCAN 7
KEY SCAN 6
KEY SCAN 5
KEY SCAN 4
KEY SCAN 3
SHIFT LOCK 2
5V 1
D7201
D7202
D7203
D7204
D7205
D7206
D7207
D7208
D7209
D7210
D7211
D7212
D7213
D7214
SHIFT
DELETE
EDIT
SIZE
MEMORY
CLEAR
D7215
SHIFT LOCK
ALL CLEAR

KEY BOARD CIRCUIT BOARD (VEPW 0426)


22
MEMORY
D7214
D7212
D7211
D7210
D7209
D7201
D7202
ALL RESET
CLEAR
D7206
D7208
D7207
D7204
D7205
D7213
D7203
D7215
EDIT
SIZE
SPASE
SHIFT

MIC JACK CIRCUIT BOARD (VEPW 0280 A)



NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

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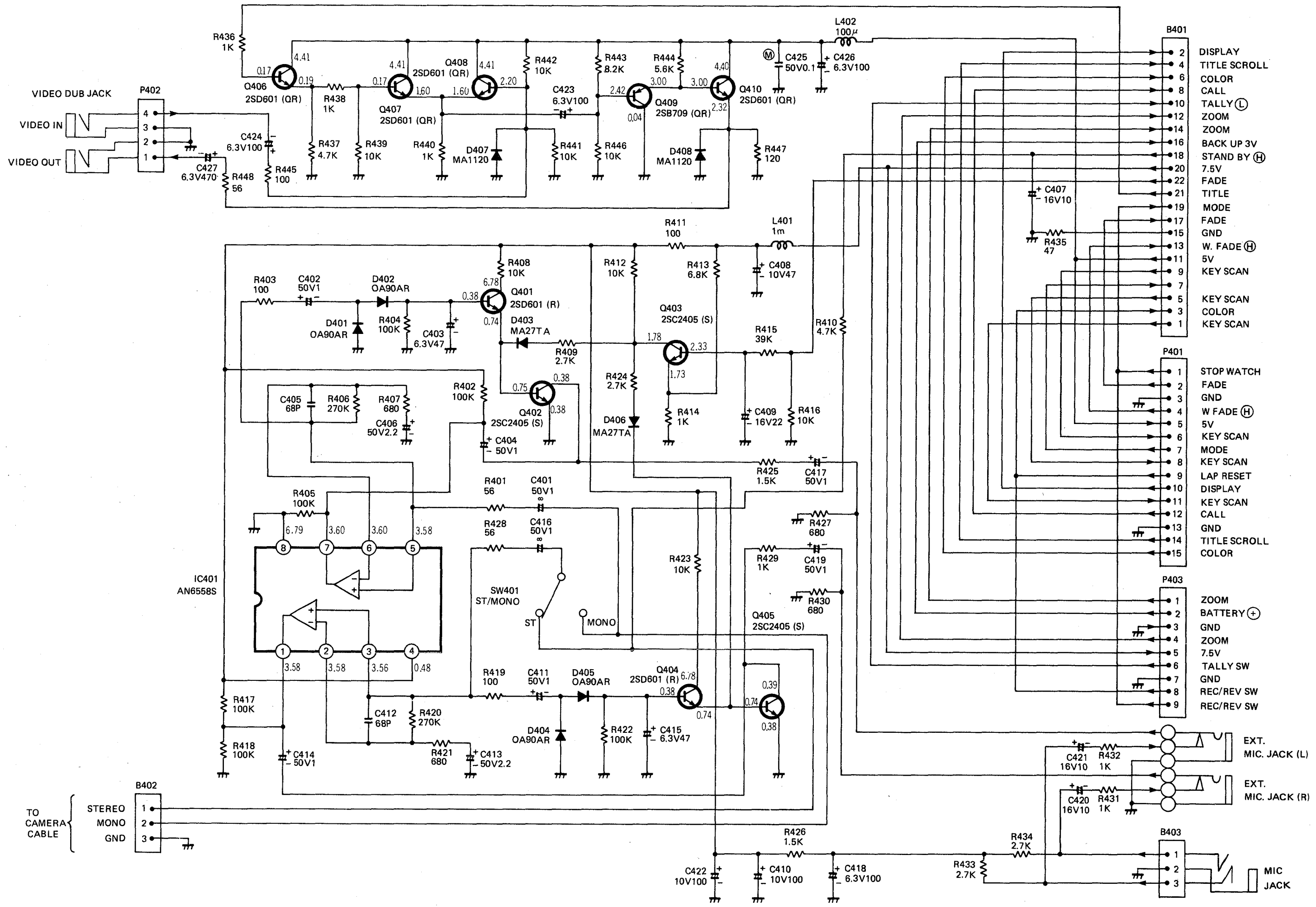
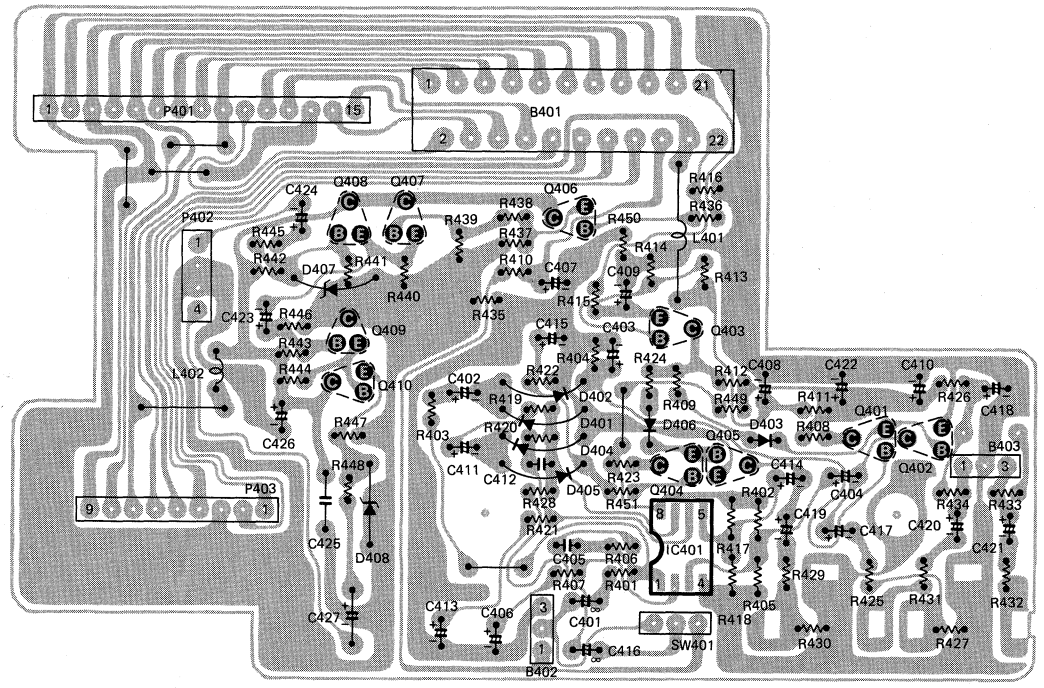
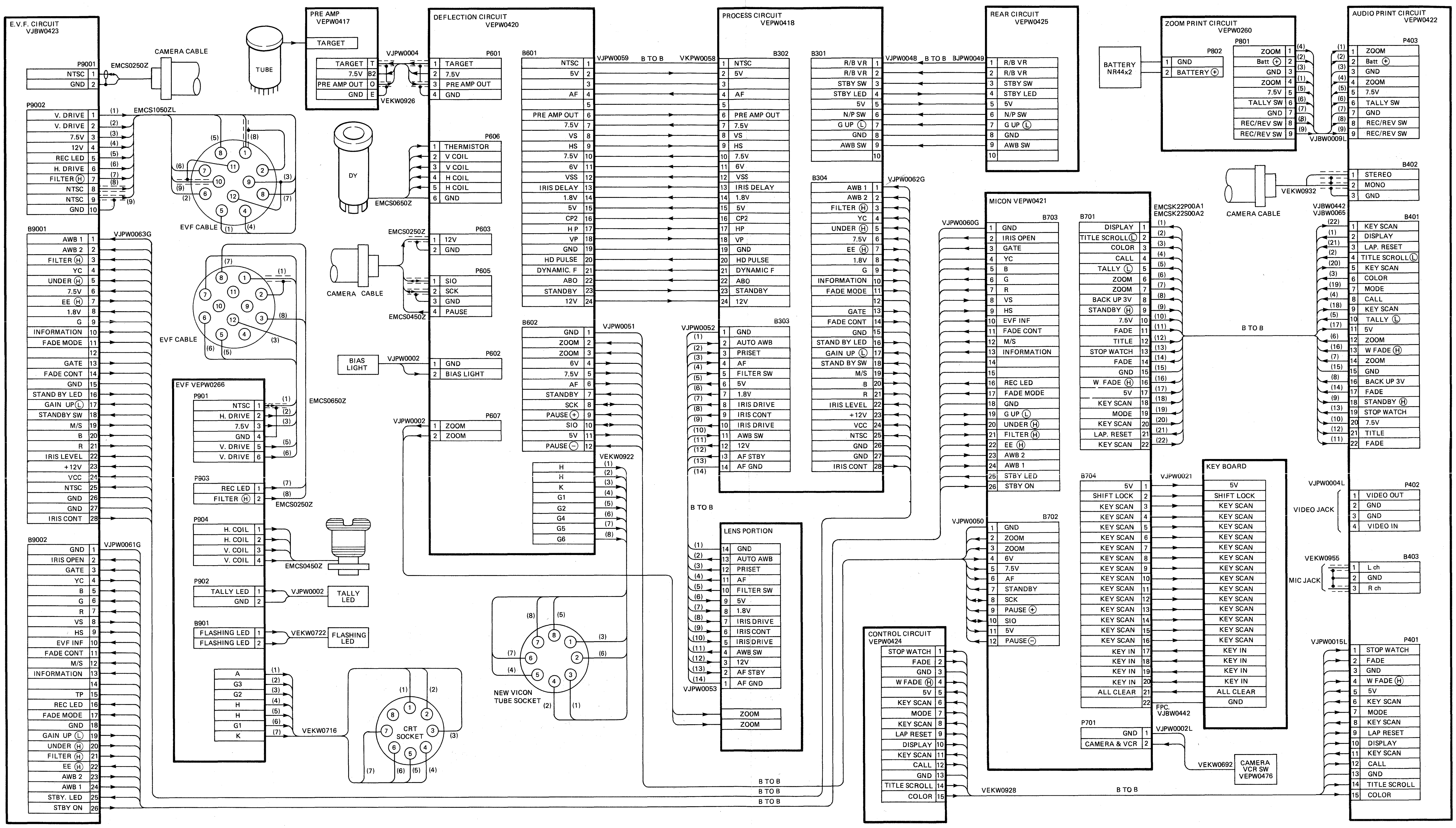
AUDIO SCHEMATIC DIAGRAM


VIDEO DUB JACK
VIDEO IN
VIDEO OUT
P402
Q406 2SD601 (QR)
Q407 2SD601 (QR)
Q408 2SD601 (QR)
Q409 2SB709 (QR)
Q410 2SD601 (QR)
L402 100μ
B401
DISPLAY
TITLE SCROLL
COLOR
CALL
TALLY
ZOOM
ZOOM
BACK UP 3V
STAND BY
7.5V
FADE
TITLE
MODE
FADE
GND
W. FADE
5V
KEY SCAN
KEY SCAN
COLOR
KEY SCAN
P401
STOP WATCH
FADE
GND
W FADE
5V
KEY SCAN
MODE
KEY SCAN
LAP RESET
DISPLAY
KEY SCAN
CALL
GND
TITLE SCROLL
COLOR
P403
ZOOM
BATTERY
GND
ZOOM
7.5V
TALLY SW
GND
REC/REV SW
REC/REV SW
IC401 AN6558S
SW401 ST/MONO
Q401 2SD601 (R)
Q402 2SC2405 (S)
Q403 2SC2405 (S)
Q404 2SD601 (R)
Q405 2SC2405 (S)
D401 OA90AR
D402 OA90AR
D403 MA27TA
D404 OA90AR
D405 OA90AR
D406 MA27TA
D407 MA1120
D408 MA1120
L401 1m
EXT. MIC. JACK (L)
EXT. MIC. JACK (R)
B402
TO CAMERA CABLE
STEREO
MONO
GND
B403
MIC JACK

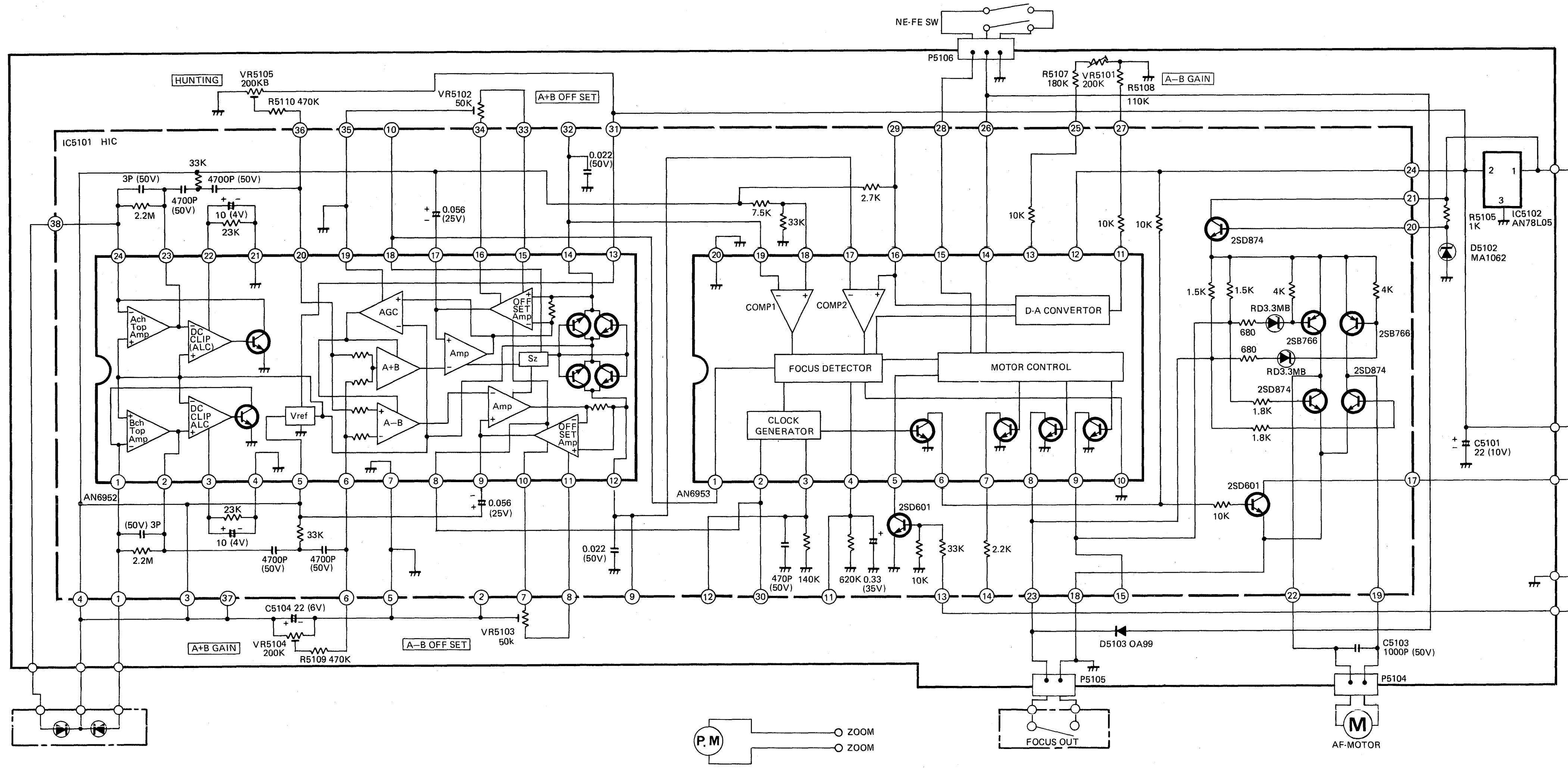
AUDIO CIRCUIT BOARD (VEPW 0422)


P401
B401
P402
P403
B402
B403
IC401
SW401
L401
L402

CAMERA UNIT INTERCONNECTION SCHEMATIC DIAGRAM


E.V.F. CIRCUIT VJBW0423
P9001
NTSC 1
GND 2
EMCS0250Z
CAMERA CABLE
P9002
V. DRIVE 1
V. DRIVE 2
7.5V 3
12V 4
REC LED 5
H. DRIVE 6
FILTER Ⓗ 7
NTSC 8
NTSC 9
GND 10
EMCS1050ZL
EVF CABLE
B9001
VJPW0063G
AWB 1 1
AWB 2 2
FILTER Ⓗ 3
YC 4
UNDER Ⓗ 5
7.5V 6
EE Ⓗ 7
1.8V 8
G 9
INFORMATION 10
FADE MODE 11
GATE 13
FADE CONT 14
GND 15
STAND BY LED 16
GAIN UP Ⓛ 17
STANDBY SW 18
M/S 19
B 20
R 21
IRIS LEVEL 22
+12V 23
VCC 24
NTSC 25
GND 26
GND 27
IRIS CONT 28
B9002
VJPW0061G
GND 1
IRIS OPEN 2
GATE 3
YC 4
B 5
G 6
R 7
VS 8
HS 9
EVF INF 10
FADE CONT 11
M/S 12
INFORMATION 13
TP 15
REC LED 16
FADE MODE 17
GND 18
GAIN UP Ⓛ 19
UNDER Ⓗ 20
FILTER Ⓗ 21
EE Ⓗ 22
AWB 2 23
AWB 1 24
STBY. LED 25
STBY ON 26
PRE AMP VEPW0417
TARGET
TARGET T
7.5V B2
PRE AMP OUT O
GND E
TUBE
VJPW0004
VEKW0926
DY
EMCS0650Z
EMCS0250Z
CAMERA CABLE
EMCS0450Z
BIAS LIGHT
VJPW0002
EVF VEPW0266
P901
NTSC 1
H. DRIVE 2
7.5V 3
GND 4
V. DRIVE 5
V. DRIVE 6
EMCS0650Z
P903
REC LED 1
FILTER Ⓗ 2
EMCS0250Z
P904
H. COIL 1
H. COIL 2
V. COIL 3
V. COIL 4
EMCS0450Z
P902
TALLY LED 1
GND 2
VJPW0002
TALLY LED
B901
FLASHING LED 1
FLASHING LED 2
VEKW0722
FLASHING LED
A
G3
G2
H
H
G1
K
VEKW0716
CRT SOCKET
DEFLECTION CIRCUIT VEPW0420
P601
1 TARGET
2 7.5V
3 PRE AMP OUT
4 GND
P606
1 THERMISTOR
2 V COIL
3 V COIL
4 H COIL
5 H COIL
6 GND
P603
1 12V
2 GND
P605
1 SIO
2 SCK
3 GND
4 PAUSE
P602
1 GND
2 BIAS LIGHT
P607
VJPW0002
1 ZOOM
2 ZOOM
B601
NTSC 1
5V 2
3
AF 4
5
PRE AMP OUT 6
7.5V 7
VS 8
HS 9
7.5V 10
6V 11
VSS 12
IRIS DELAY 13
1.8V 14
5V 15
CP2 16
H P 17
VP 18
GND 19
HD PULSE 20
DYNAMIC. F 21
ABO 22
STANDBY 23
12V 24
VJPW0059 B TO B VKPW0058
B602
VJPW0051
GND 1
ZOOM 2
ZOOM 3
6V 4
7.5V 5
AF 6
STANDBY 7
SCK 8
PAUSE ⊕ 9
SIO 10
5V 11
PAUSE ⊖ 12
VEKW0922
H
H
K
G1
G2
G4
G5
G6
NEW VICON TUBE SOCKET
PROCESS CIRCUIT VEPW0418
B302
1 NTSC
2 5V
3
4 AF
5
6 PRE AMP OUT
7 7.5V
8 VS
9 HS
10 7.5V
11 6V
12 VSS
13 IRIS DELAY
14 1.8V
15 5V
16 CP2
17 HP
18 VP
19 GND
20 HD PULSE
21 DYNAMIC F
22 ABO
23 STANDBY
24 12V
VJPW0052
B303
1 GND
2 AUTO AWB
3 PRISET
4 AF
5 FILTER SW
6 5V
7 1.8V
8 IRIS DRIVE
9 IRIS CONT
10 IRIS DRIVE
11 AWB SW
12 12V
13 AF STBY
14 AF GND
B301
R/B VR 1
R/B VR 2
STBY SW 3
STBY LED 4
5V 5
N/P SW 6
G UP Ⓛ 7
GND 8
AWB SW 9
10
B304
VJPW0062G
AWB 1 1
AWB 2 2
FILTER Ⓗ 3
YC 4
UNDER Ⓗ 5
7.5V 6
EE Ⓗ 7
1.8V 8
G 9
INFORMATION 10
FADE MODE 11
12
GATE 13
FADE CONT 14
GND 15
STAND BY LED 16
GAIN UP Ⓛ 17
STAND BY SW 18
M/S 19
B 20
R 21
IRIS LEVEL 22
+12V 23
VCC 24
NTSC 25
GND 26
GND 27
IRIS CONT 28
B TO B
LENS PORTION
14 GND
13 AUTO AWB
12 PRISET
11 AF
10 FILTER SW
9 5V
8 1.8V
7 IRIS DRIVE
6 IRIS CONT
5 IRIS DRIVE
4 AWB SW
3 12V
2 AF STBY
1 AF GND
VJPW0053
ZOOM
ZOOM
B TO B
B TO B
B TO B
REAR CIRCUIT VEPW0425
VJPW0048 B TO B BJPW0049
1 R/B VR
2 R/B VR
3 STBY SW
4 STBY LED
5 5V
6 N/P SW
7 G UP Ⓛ
8 GND
9 AWB SW
10
BATTERY NR44x2
ZOOM PRINT CIRCUIT VEPW0260
P802
1 GND
2 BATTERY ⊕
P801
ZOOM 1
Batt ⊕ 2
GND 3
ZOOM 4
7.5V 5
TALLY SW 6
GND 7
REC/REV SW 8
REC/REV SW 9
VJBW0009L
MICON VEPW0421
VJPW0060G
B703
1 GND
2 IRIS OPEN
3 GATE
4 YC
5 B
6 G
7 R
8 VS
9 HS
10 EVF INF
11 FADE CONT
12 M/S
13 INFORMATION
14
15
16 REC LED
17 FADE MODE
18 GND
19 G UP Ⓛ
20 UNDER Ⓗ
21 FILTER Ⓗ
22 EE Ⓗ
23 AWB 2
24 AWB 1
25 STBY LED
26 STBY ON
B701
DISPLAY 1
TITLE SCROLL Ⓛ 2
COLOR 3
CALL 4
TALLY Ⓛ 5
ZOOM 6
ZOOM 7
BACK UP 3V 8
STANDBY Ⓗ 9
7.5V 10
FADE 11
TITLE 12
STOP WATCH 13
FADE 14
GND 15
W_FADE Ⓗ 16
5V 17
KEY SCAN 18
MODE 19
KEY SCAN 20
LAP. RESET 21
KEY SCAN 22
EMCSK22P00A1
EMCSK22S00A2
B TO B
VJPW0050
B702
1 GND
2 ZOOM
3 ZOOM
4 6V
5 7.5V
6 AF
7 STANDBY
8 SCK
9 PAUSE ⊕
10 SIO
11 5V
12 PAUSE ⊖
B704
VJPW0021
5V 1
SHIFT LOCK 2
KEY SCAN 3
KEY SCAN 4
KEY SCAN 5
KEY SCAN 6
KEY SCAN 7
KEY SCAN 8
KEY SCAN 9
KEY SCAN 10
KEY SCAN 11
KEY SCAN 12
KEY SCAN 13
KEY SCAN 14
KEY SCAN 15
KEY SCAN 16
KEY IN 17
KEY IN 18
KEY IN 19
KEY IN 20
ALL CLEAR 21
22
FPC. VJBW0442
P701
GND 1
CAMERA & VCR 2
VJPW0002L
VEKW0692
CAMERA VCR SW VEPW0476
KEY BOARD
5V
SHIFT LOCK
KEY SCAN
KEY SCAN
KEY SCAN
KEY SCAN
KEY SCAN
KEY SCAN
KEY SCAN
KEY SCAN
KEY SCAN
KEY SCAN
KEY SCAN
KEY SCAN
KEY SCAN
KEY IN
KEY IN
KEY IN
KEY IN
ALL CLEAR
GND
CONTROL CIRCUIT VEPW0424
STOP WATCH 1
FADE 2
GND 3
W FADE Ⓗ 4
5V 5
KEY SCAN 6
MODE 7
KEY SCAN 8
LAP RESET 9
DISPLAY 10
KEY SCAN 11
CALL 12
GND 13
TITLE SCROLL 14
COLOR 15
VEKW0928
B TO B
AUDIO PRINT CIRCUIT VEPW0422
P403
1 ZOOM
2 Batt ⊕
3 GND
4 ZOOM
5 7.5V
6 TALLY SW
7 GND
8 REC/REV SW
9 REC/REV SW
B402
CAMERA CABLE
VEKW0932
1 STEREO
2 MONO
3 GND
VJBW0442
VJBW0065
B401
1 KEY SCAN
2 DISPLAY
3 LAP. RESET
4 TITLE SCROLL Ⓛ
5 KEY SCAN
6 COLOR
7 MODE
8 CALL
9 KEY SCAN
10 TALLY Ⓛ
11 5V
12 ZOOM
13 W FADE Ⓗ
14 ZOOM
15 GND
16 BACK UP 3V
17 FADE
18 STANDBY Ⓗ
19 STOP WATCH
20 7.5V
21 TITLE
22 FADE
VJPW0004L
P402
VIDEO JACK
1 VIDEO OUT
2 GND
3 GND
4 VIDEO IN
VEKW0955
B403
MIC JACK
1 L ch
2 GND
3 R ch
VJPW0015L
P401
1 STOP WATCH
2 FADE
3 GND
4 W FADE Ⓗ
5 5V
6 KEY SCAN
7 MODE
8 KEY SCAN
9 LAP RESET
10 DISPLAY
11 KEY SCAN
12 CALL
13 GND
14 TITLE SCROLL
15 COLOR

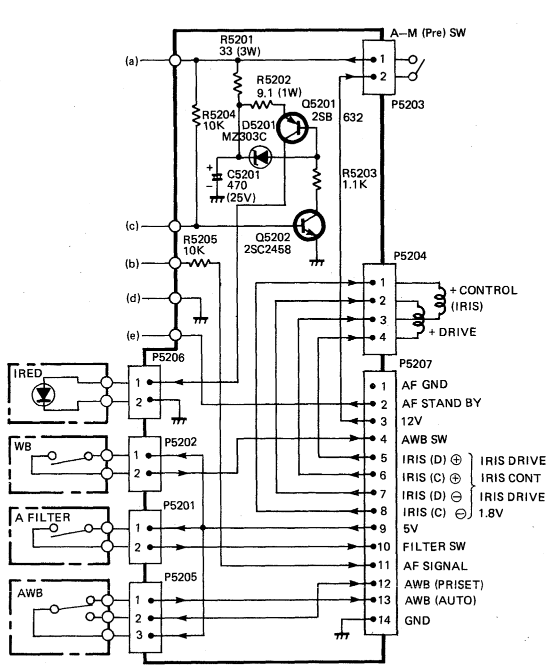
AUTO FOCUS (A) SCHEMATIC DIAGRAM



NE-FE SW
P5106
HUNTING
VR5105 200KB
R5110 470K
VR5102 50K
A+B OFF SET
R5107 180K
VR5101 200K
R5108 110K
A—B GAIN
IC5101 HIC
33K
3P (50V)
4700P (50V)
2.2M
4700P (50V)
10 (4V)
23K
0.056 (25V)
0.022 (50V)
2.7K
7.5K
33K
10K
10K
10K
2SD874
IC5102 AN78L05
R5105 1K
D5102 MA1062
AGC
Ach Top Amp
DC CLIP (ALC)
Bch Top Amp
DC CLIP ALC
Vref
A+B
A—B
Amp
OFF SET Amp
Sz
COMP1
COMP2
D-A CONVERTOR
FOCUS DETECTOR
MOTOR CONTROL
CLOCK GENERATOR
AN6952
AN6953
1.5K
1.5K
4K
4K
RD3.3MB
680
680
2SB766
2SB766
2SD874
2SD874
1.8K
1.8K
C5101 22 (10V)
2SD601
10K
(50V) 3P
23K
10 (4V)
33K
4700P (50V)
4700P (50V)
0.056 (25V)
0.022 (50V)
470P (50V)
140K
620K
0.33 (35V)
33K
2.2K
10K
C5104 22 (6V)
VR5103 50k
A+B GAIN
VR5104 200K
R5109 470K
A—B OFF SET
D5103 OA99
C5103 1000P (50V)
P5105
P5104
(a)
(b)
(c)
(d)
(e)
P.M
ZOOM
ZOOM
FOCUS OUT
AF-MOTOR

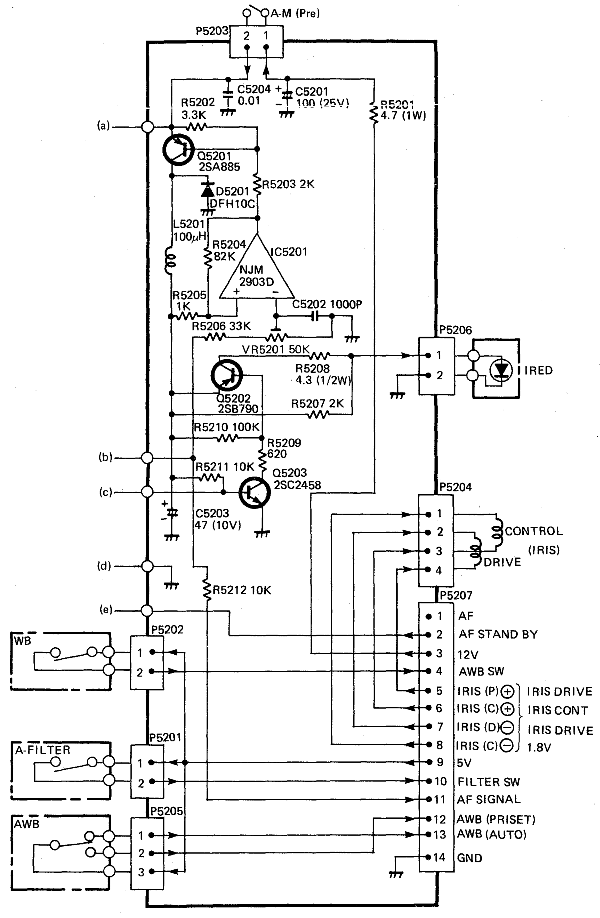
AUTO FOCUS(B) SCHEMATIC DIAGRAM

×8



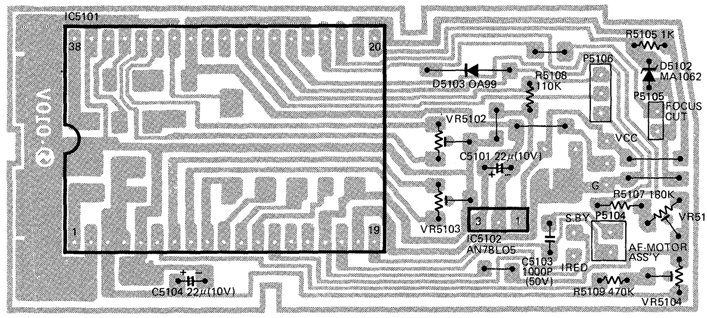
A—M (Pre) SW
R5201 33 (3W)
R5202 9.1 (1W)
P5203
632
R5204 10K
D5201 MZ303C
Q5201 2SB
C5201 470 (25V)
R5203 1.1K
R5205 10K
Q5202 2SC2458
P5204
+ CONTROL (IRIS)
+ DRIVE
P5206
IRED
P5202
WB
P5201
A FILTER
P5205
AWB
P5207
AF GND
AF STAND BY
12V
AWB SW
IRIS (D) ⊕
IRIS (C) ⊕
IRIS (D) ⊖
IRIS (C) ⊖
IRIS DRIVE
IRIS CONT
IRIS DRIVE
1.8V
5V
FILTER SW
AF SIGNAL
AWB (PRISET)
AWB (AUTO)
GND
(a)
(b)
(c)
(d)
(e)

×10



A-M (Pre)
P5203
C5204 0.01
C5201 100 (25V)
R5202 3.3K
R5201 4.7 (1W)
Q5201 2SA885
D5201 DFH10C
R5203 2K
L5201 100μH
R5204 82K
IC5201 NJM 2903D
R5205 1K
C5202 1000P
R5206 33K
VR5201 50K
P5206
IRED
R5208 4.3 (1/2W)
Q5202 2SB790
R5207 2K
R5210 100K
R5209 620
R5211 10K
Q5203 2SC2458
P5204
CONTROL (IRIS)
DRIVE
C5203 47 (10V)
R5212 10K
P5207
AF
AF STAND BY
12V
AWB SW
IRIS (P)⊕
IRIS (C)⊕
IRIS (D)⊖
IRIS (C)⊖
IRIS DRIVE
IRIS CONT
IRIS DRIVE
1.8V
5V
FILTER SW
AF SIGNAL
AWB (PRISET)
AWB (AUTO)
GND
P5202
WB
P5201
A-FILTER
P5205
AWB
(a)
(b)
(c)
(d)
(e)

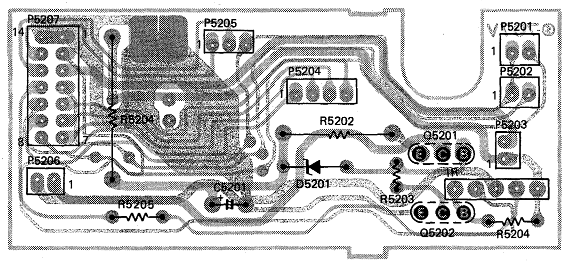
AUTO FOCUS(A) CIRCUIT BOARD (VEPW0361)



IC5101
38
20
1
19
R5105 1K
D5103 OA99
R5108 110K
P5106
D5102 MA1062
P5105
FOCUS OUT
VR5102
C5101 22/(10V)
VCC
G
R5107 180K
VR5101
VR5103
IC5102 AN78L05
S.BY
P5104
AF MOTOR ASS'Y
C5103 1000P (50V)
IRED
R5109 470K
VR5104
C5104 22/(10V)

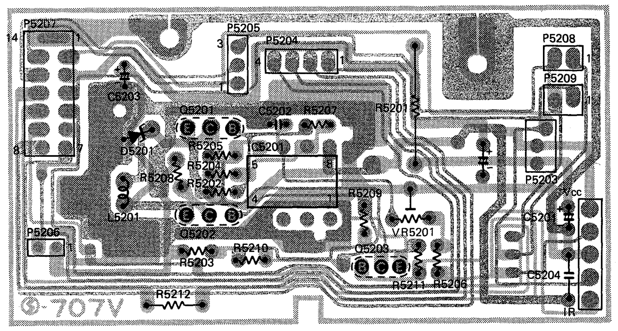
AUTO FOCUS(B) CIRCUIT BOARD

×8 (VEPW0509)



P5207
14
8
P5205
P5201
P5202
P5204
R5204
R5202
Q5201
P5203
P5206
R5205
D5201
Q5201
R5203
Q5202
R5204

×10 (VEPW0510)



P5207
14
8
P5205
P5204
P5208
P5209
C5203
Q5201
C5202
R5207
R5203
D5201
R5206
R5208
R5205
Q5203
R5201
IC5201
P5202
L5201
Q5202
R5210
R5209
VR5201
C5201
C5204
P5206
R5212
R5211
R5202
IR

NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

SPECIAL NOTE All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "Electrostatically Sensitive (ES) Devices" section of this service manual.

SECTION4

EXploded Views
Replacement Parts List

CONTENTS

EXPLODED VIEWS (Camera Head)

1. Camera Unit Section 4-2
2. Camera Unit Casing Parts Section. 4-3
3. Shoulder Grip Unit and Packing Parts Section. 4-4
4. Electronic Viewfinder Section 4-5
5. Auto Focus Lens Unit Section (x8). 4-6
6. Auto Focus Lens Unit Section (x10). 4-7

MECHANICAL REPLACEMENT PARTS LIST (Camera Unit) 4-8,4-9

ELECTRICAL REPLACEMENT PARTS LIST (Camera Unit) . . . . .4-10~4-21

AUTO FOCUS SECTION (x8) (Mechanical Replacement Parts List). 4-21

AUTO FOCUS SECTION (x8) (Electrical Replacement Parts List) 4-22

AUTO FOCUS SECTION (x10) (Mechanical Replacement Parts List) 4-22

AUTO FOCUS SECTION (x10) (Electrical Replacement Parts List) 4-23

Note:

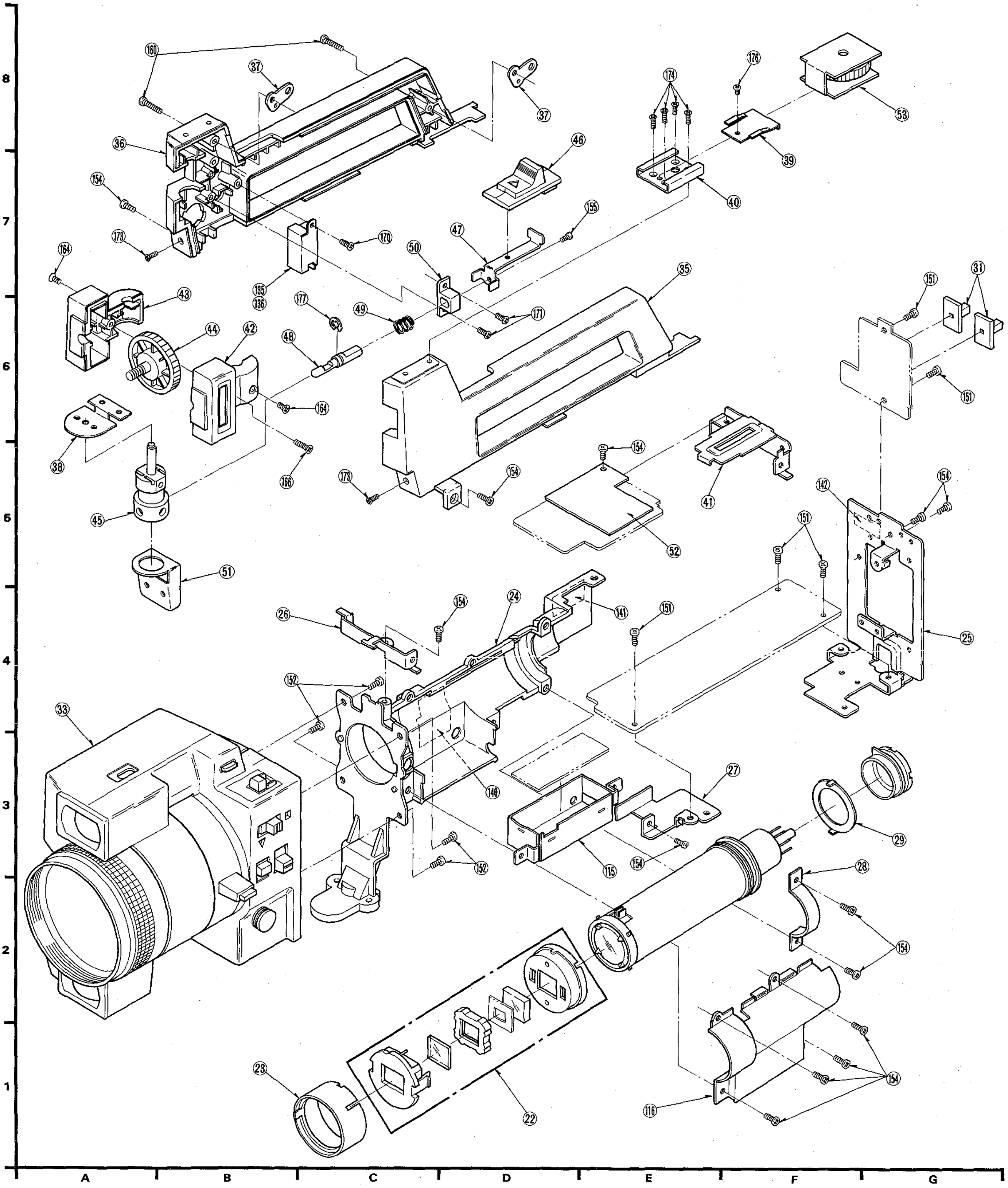
1. ITEM NUMBERS WITH CAPITAL LETTER E
   Item numbers with capital letter E (Example: E-1, E-2, . . .) in the exploded views mean that parts so labeled are listed in the electrical parts list. In the electrical parts list, the E item numbers are printed in Ref. No. column, and also listed on the same page at the end of the column.

2. "E.S.D." INDICATION
   Parts with "E.S.D." indication in parts list are electrostatically sensitive and require the special handling techniques described under the "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" section of this manual.

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are shaded on the schematic diagram and on the replacement parts list. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.

EXPLODED VIEW ❶ *Camera Unit Section*



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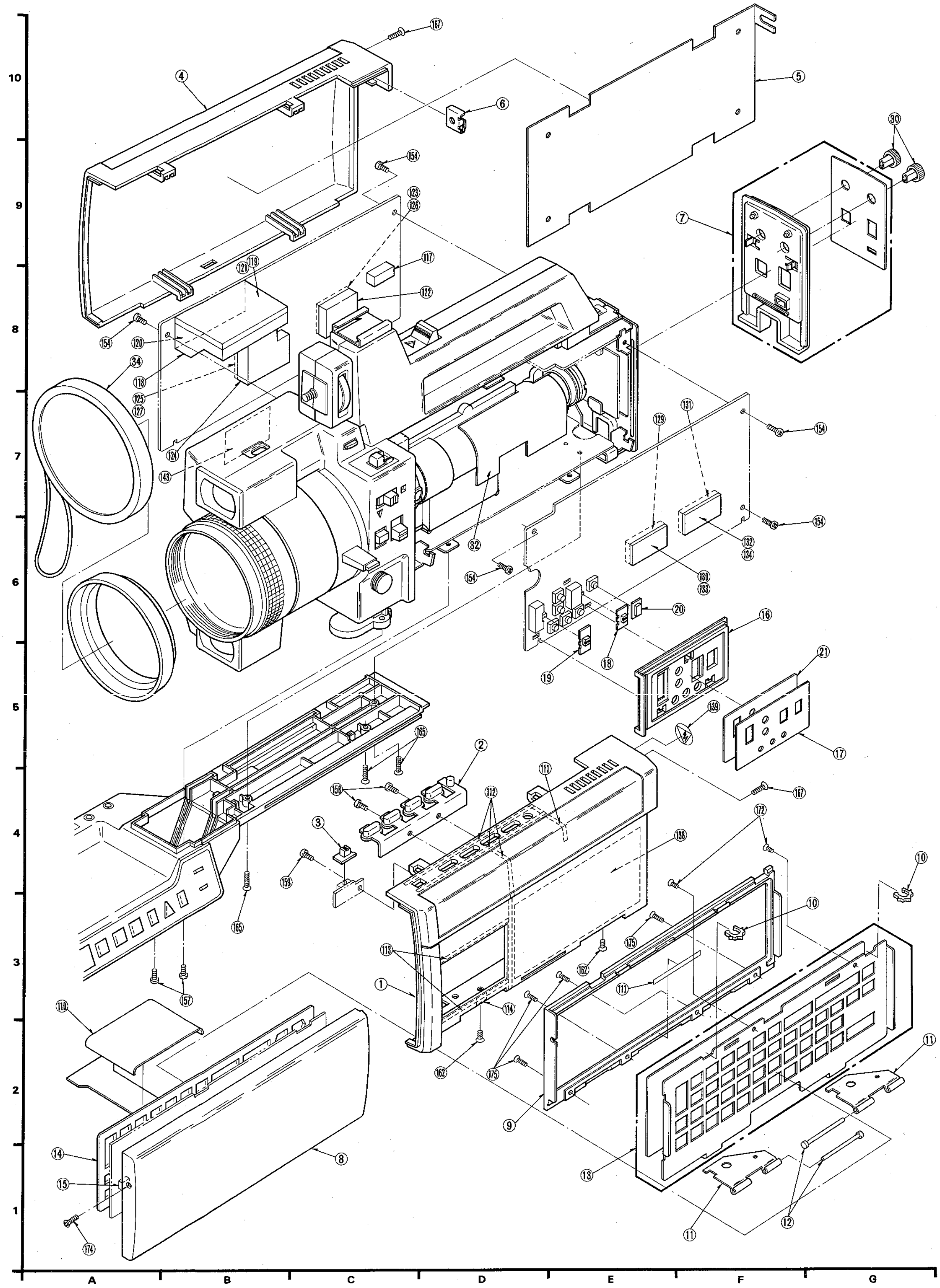
❷ *Camera Unit Casing Parts Section*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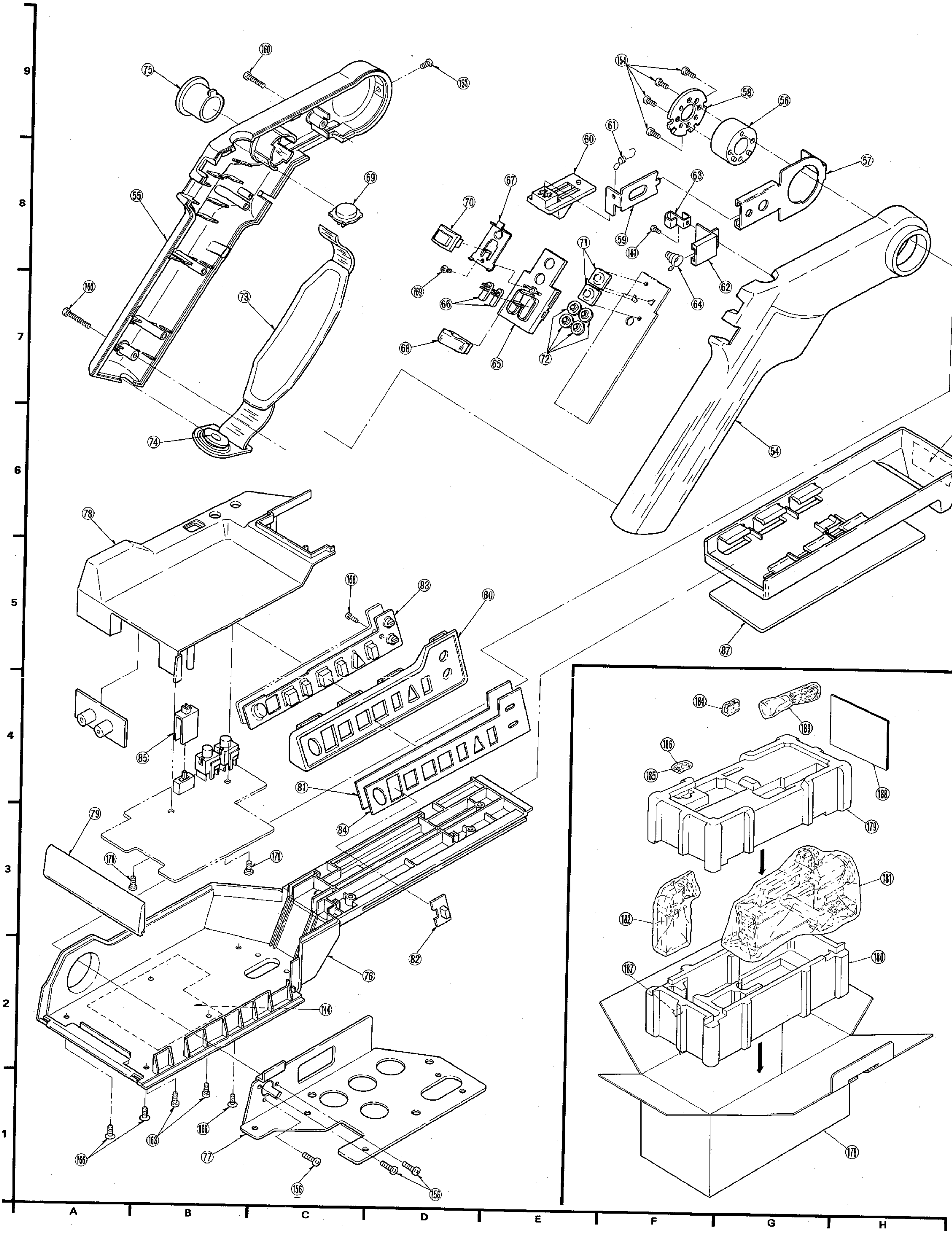
❸ *Shoulder Grip Unit and Packing Parts Section*



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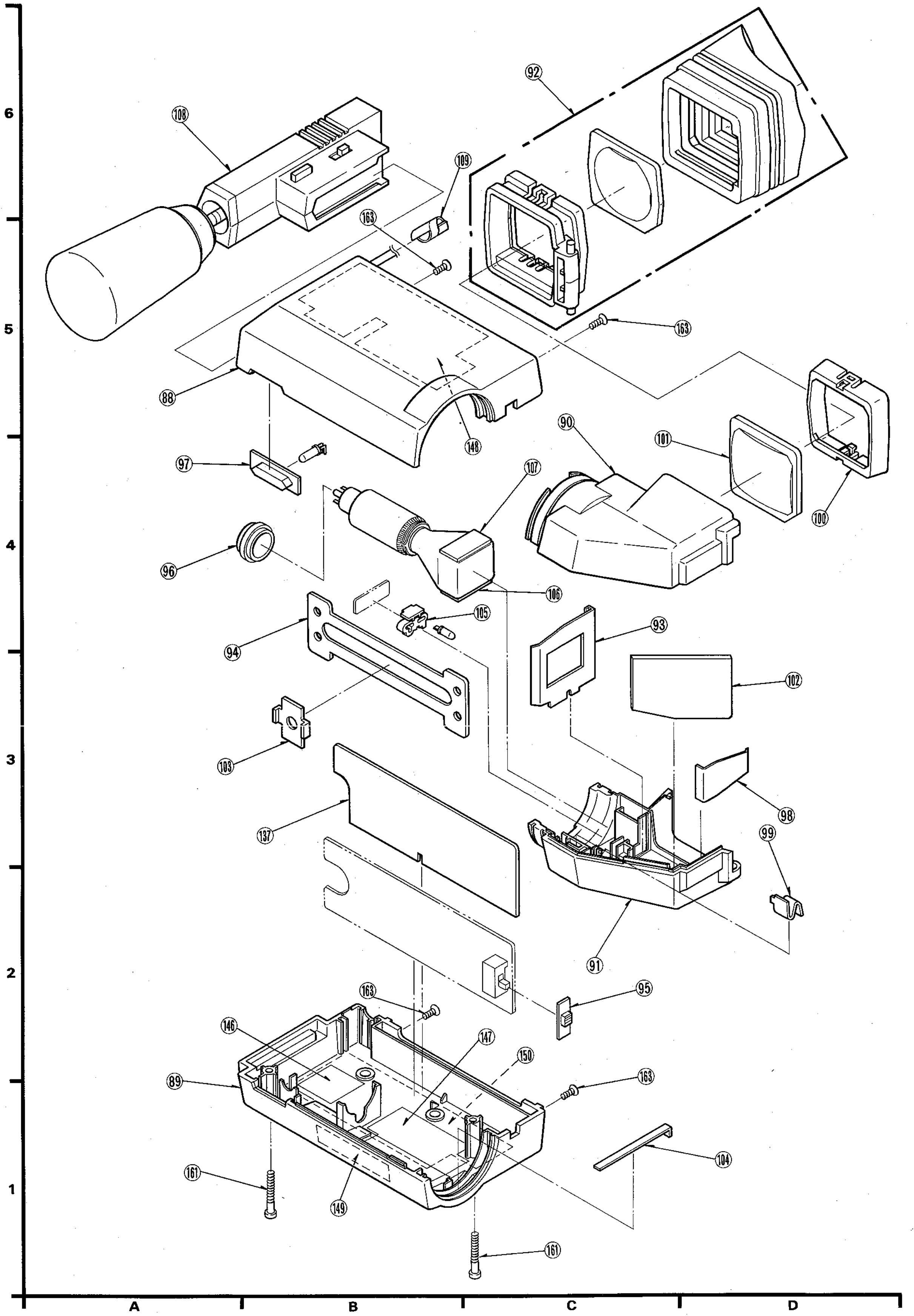
❹ *Electronic Viewfinder Section*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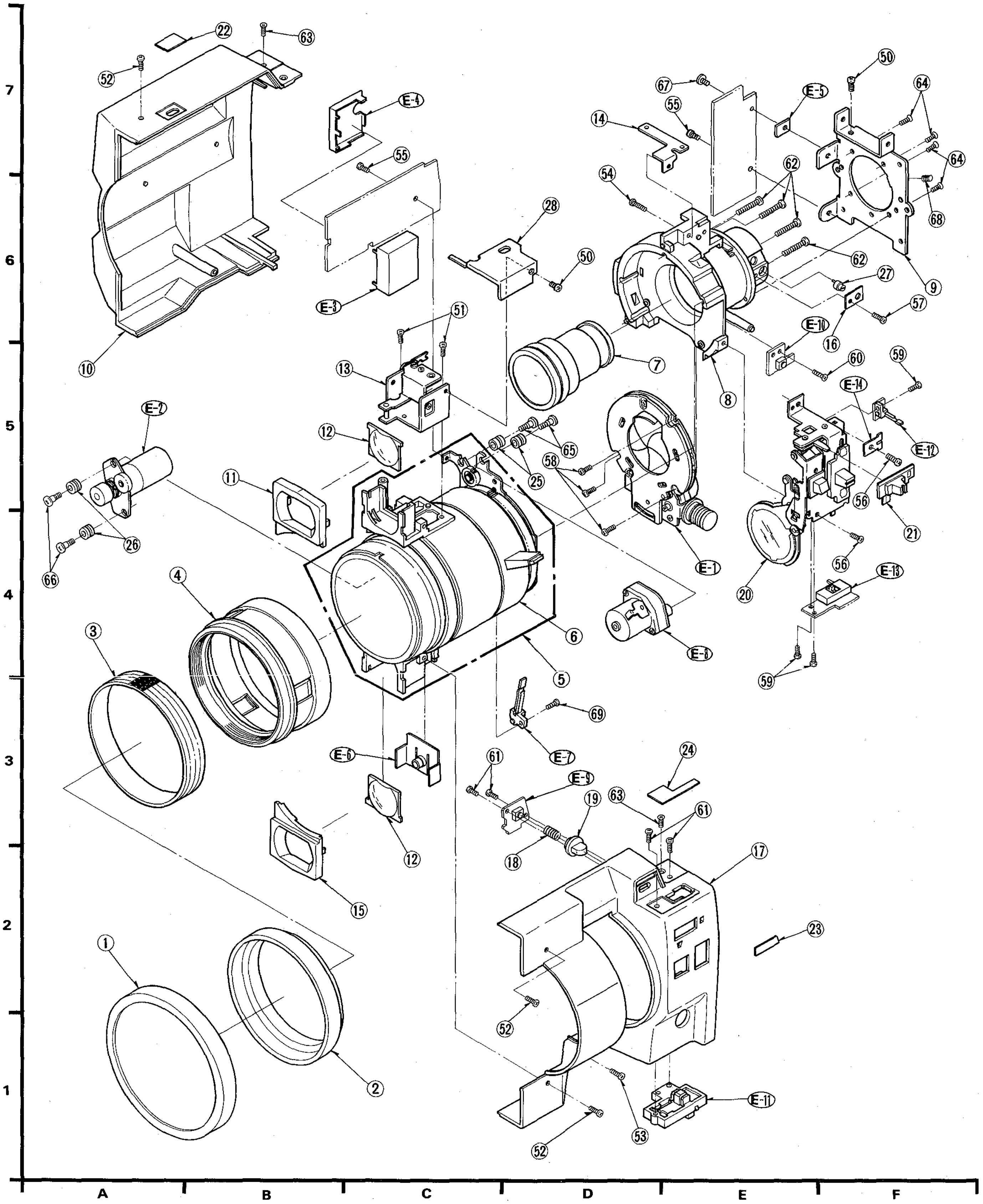
❺ Auto Focus Lens Unit Section (x8)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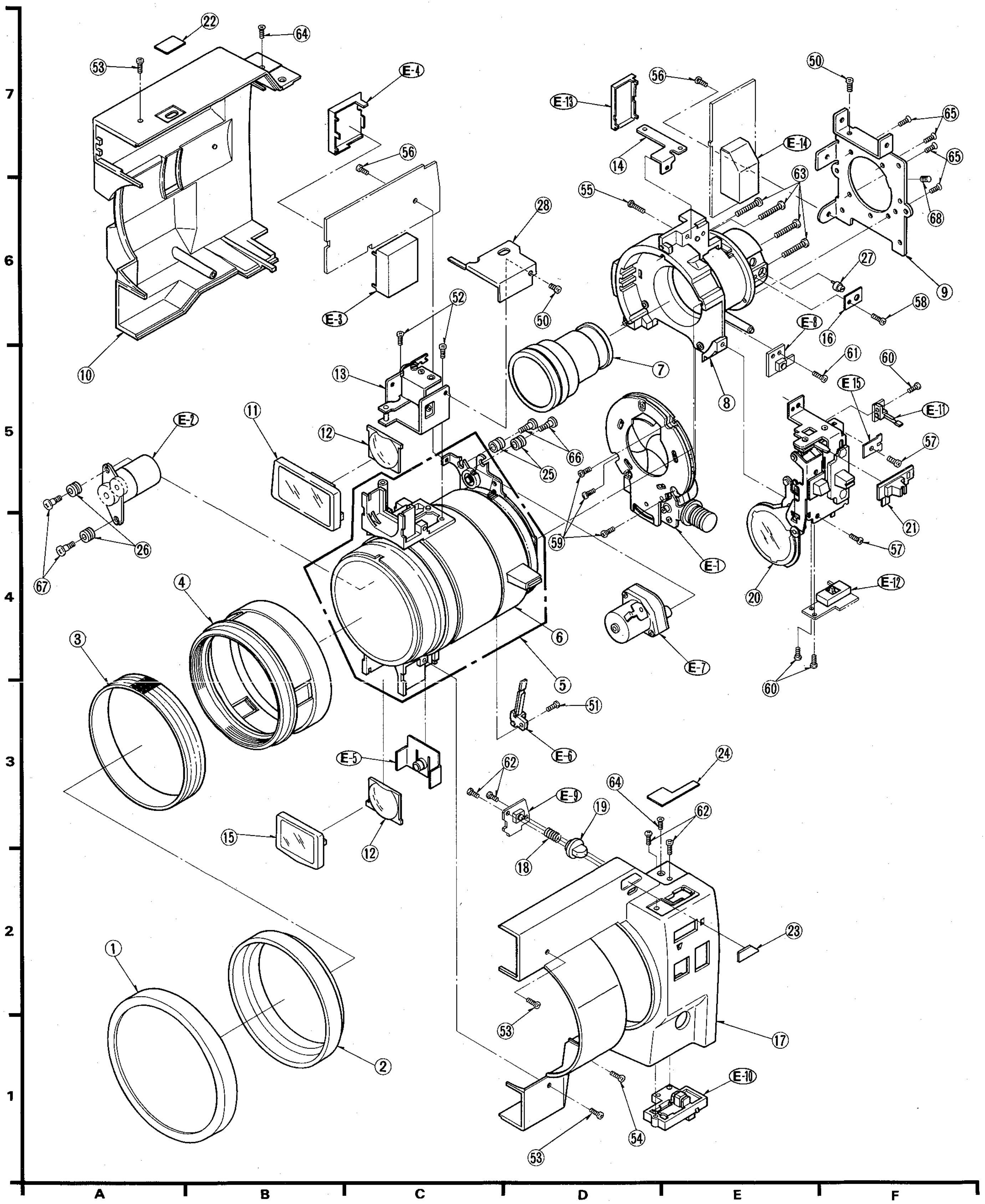
❻ Auto Focus Lens Unit Section (x10)



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Mechanical Replacement Parts List

Model No. PK-959, PK-980, PK-959-K, PK-980-K, VK746YE, VK766YE, VK746-K

Note: Be sure make your orders of replacement parts according to this list.

MODEL NUMBER	DIVISION	MODEL NUMBER	DIVISION
PK-959	A	PK-959-K	E
PK-980	B	PK-980-K	F
VK746YE	C	VK746-K	G
VK766YE	D	COMMON	*

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			C.S.U		
1 (2)		VYKW0555	SIDE COVER ASS'Y (R)	1	A.B.E.F
1 (2)		VYKW0723	SIDE COVER ASS'Y (R)	1	C.D.G
2 (2)		VGTW0093-1	VCR PUSH BUTTON	1	*
3 (2)		VGTW0094	CAMERA/VCR SELECTION KNOB	1	*
4 (2)		VYKW0718	SIDE COVER ASS'Y (L)	1	A.E
4 (2)		VYKW0721	SIDE COVER ASS'Y (L)	1	D
4 (2)		VYKW0722	SIDE COVER ASS'Y (L)	1	C
4 (2)		VYKW0720	SIDE COVER ASS'Y (L)	1	B.F
4 (2)		VYKW0778	SIDE COVER ASS'Y (L)	1	G
5 (2)		VMZW0146	BARRIER (L)	1	*
6 (2)		VMBW0033	GROUND PLATE	1	*
7 (2)		VYKW0774	BACK COVER ASS'Y	1	E
7 (2)		VYKW0709	BACK COVER ASS'Y	1	A
7 (2)		VYKW0618	BACK COVER ASS'Y	1	C.D.G
7 (2)		VYKW0775	BACK COVER ASS'Y	1	F
7 (2)		VYKW0717	BACK COVER ASS'Y	1	B
8 (2)		VKGW0685	SIDE DOOR	1	A.E
8 (2)		VKGW0691	SIDE DOOR	1	D
8 (2)		VKGW0693	SIDE DOOR	1	C
8 (2)		VKGW0689	SIDE DOOR	1	B.F
8 (2)		VKGW0787	SIDE DOOR	1	G
9 (2)		VKGW0511	FRAME	1	*
10 (2)		VKBW0008	DOOR LATCH PIECE	2	*
11 (2)		VMAW0186	HINGE ANGLE	2	*
12 (2)		VMSW0042	HINGE PIN	2	*
13 (2)		VXAW0062	HINGE PANEL ASS'Y	1	A.B.E.F
13 (2)		VXAW0063	HINGE PANEL ASS'Y	1	C.D.G
14 (2)		VMGW0082	RUBBER SWITCH	1	*
15 (2)		VMZW0238	LED SPACER (A)	1	*
16 (2)		VKGW0456	SWITCH CASE	1	*
17 (2)		VGPW0278	SWITCH PANEL	1	*
18 (2)		VGTW0095	TITLE SELECTION KNOB	1	*
19 (2)		VGTW0096	TIMER SELECTION KNOB	1	*
20 (2)		VGTW0097	PUSH BUTTON	1	*
21 (2)		VSCW0155	ESD SHIELD PLATE	1	*
22 (1)		VXEW0028	FILTER ASS'Y	1	A.C.E.G
22 (1)		VXEW0033	FILTER ASS'Y	1	B.D.F
23 (1)		VMDW0028-1	FILTER RING	1	*
24 (1)		VMKW0043-1	MAIN CHASSIS	1	*
25 (1)		VMAW0269	SUB CHASSIS	1	*
26 (1)		VMAW0271	P.C.B. PLATE (A)	1	*
27 (1)		VMAW0304	P.C.B. PLATE (D)	1	*
28 (1)		VMAW0098-1	DY BAND	1	*
29 (1)		VMBW0023-1	DY SPRING	1	*
30 (2)		VXTW0003	R/B VOLUME KNOB ASS'Y	2	*
31 (1)		VGTW0107	STANDBY SW KNOB	2	*
32 (2)		VXEW0034	DY BARRIER ASS'Y	1	*
33 (1)		VFLW0104	X8 AUTO FOCUS LENS	1	A.C.E.G
33 (1)		VFLW0105	X10 AUTO FOCUS LENS	1	B.D.F
34 (2)		VXJW0006	HOOD CAP ASS'Y	1	*
35 (1)		VKGW0435	TOP HANDLE (R)	1	*
36 (1)		VKGW0436	TOP HANDLE (L)	1	*
37 (1)		VMAW0181	STRAP HOLDER	2	*
38 (1)		VMAW0224	SHOE FIXING ANGLE (A)	1	*
39 (1)		VMBW0031	SHOE PRESSING SPRING	1	*
40 (1)		VMAW0156	SHOE	1	*
41 (1)		VMAW0270	TOP HANDLE ANGLE	1	*
42 (1)		VKGW0728	E.V.F. MOVEABLE CASE (R)	1	*
43 (1)		VKGW0783	E.V.F. MOVEABLE CASE (L)	1	*
44 (1)		VGTW0033	E.V.F. KNOB	1	*
45 (1)		VMSW0062	SUPPORT	1	*
46 (1)		VGTW0105	LOCK KNOB	1	*
47 (1)		VMAW0184	LOCK FIXING ANGLE	1	*
48 (1)		VMSW0061	LOCK PIN	1	*
49 (1)		VMBW0057	LOCK SPRING	1	*
50 (1)		VMDW0086	LOCK ANGLE	1	*
51 (1)		VMAW0183	SUPPORT FIXING ANGLE (B)	1	*
52 (1)		VXEW0035	TOP HANDLE BARRIER ASS'Y	1	*
53 (1)		VXFW0007	LIGHT FOOT ROLLER ASS'Y	1	C.D
			REMO.CON.SHOULDER		
54 (3)		VKHW0049	GRIP (R)	1	*
55 (3)		VKHW0050	GRIP (L)	1	*
56 (3)		VMDW0070	CRUTCH (A)	1	*
57 (3)		VMAW0193	CRUTCH STOPPER	1	*
58 (3)		VMVW0012	CRUTCH (B)	1	*
59 (3)		VMAW0192	CRUTCH LEVER	1	*
60 (3)		VGTW0105	LOCK KNOB	1	*
61 (3)		VMBW0055	LOCK SPRING	1	*
62 (3)		VGTW0110	SELL TERMINAL HOLDER	1	*
63 (3)		VMBW0053	SELL TERMINAL (+)	1	*
64 (3)		VMBW0054	SELL TERMINAL (-)	1	*
65 (3)		VGTW0114	POWER ZOOM BUTTON HOLDER	1	*
66 (3)		VGTW0115	JOINT LEVER	2	*
67 (3)		VMBW0056	ESD SPRING	1	*
68 (3)		VGTW0113	POWER ZOOM BUTTON	1	*
69 (3)		VGTW0112	REC/REV BUTTON	1	*
70 (3)		VGTW0111	TALLY BUTTON	1	*
71 (3)		VMGW0053	RUBBER SWITCH (B)	2	*
72 (3)		VMGW0063	RUBBER SWITCH (C)	4	*
73 (3)		VFBW0022	HAND STRAP	1	*
74 (3)		VKGW0356	STRAP HOLDER	1	*
75 (3)		VKHW0052	SELL CAP	1	*
76 (3)		VKGW0651	BOTTOM CASE	1	*
77 (3)		VMAW0267	BOTTOM ANGLE	1	*
78 (3)		VKGW0678	BOTTOM COVER	1	*
79 (3)		VKGW0677	FRONT DOOR	1	A.B.E.F
79 (3)		VKGW0652	FRONT DOOR	1	C.D.G
80 (3)		VKGW0650	PANEL CASE	1	*
81 (3)		VSCW0181	ESD PLATE	1	*
82 (3)		VGTW0203	FADE KNOB	1	*
83 (3)		VMGW0084	RUBBER SWITCH	1	*
84 (3)		VGPW0341	MI. COM. PANEL	1	A.B.E.F
84 (3)		VGPW0337	MI. COM. PANEL	1	C.D.G
85 (3)		VGTW0109	AUDIO SELECTOR KNOB	1	*
86 (3)		VKGW0439	SHOULDER SLIDE	1	*
87 (3)		VMFW0037	SHOULDER PAD	1	*
			SIDE E.V.F.		
88 (4)		VKGW0428	E.V.F. TOP COVER	1	A.B.E.F
88 (4)		VKGW0514	E.V.F. TOP COVER	1	C.D.G
89 (4)		VKGW0429	E.V.F. BOTTOM COVER	1	*
90 (4)		VKGW0654	CRT CASE (A)	1	*
91 (4)		VKGW0655	CRT CASE (B)	1	*
92 (4)		VYKW0750	E.V.F. DOOR ASS'Y	1	*
93 (4)		VMAW0180	CRT PROTECTION COVER	1	*
94 (4)		VMAW0179	CASE FIXING ANGLE	1	*
95 (4)		VGTW0098	R/L CHANGE KNOB	1	*
96 (4)		VMGW0016	CRT FIXING BUSH	1	*
97 (4)		VGQW0019	TALLY DIFFUSION PIECE	1	*
98 (4)		VMBW0084	E.V.F. SPRING	1	*
99 (4)		VMAW0204	GROUND SPRING	1	*
100 (4)		VMXW0073	LENS SPACER	1	*
101 (4)		VFLW0090	E.V.F. LENS (G1)	1	*
102 (4)		VMRW0008	E.V.F. MIRROR	1	*
103 (4)		VMAW0094	E.V.F. MOVEABLE ANGLE	1	*
104 (4)		VMBW0036	E.V.F. ROTATION SPRING	1	*
105 (4)		VMXW0065-1	LED SPACER	1	*
106 (4)		VMGW0031	CRT CUSHION (II)	1	*
107 (4)		VMGW0032	CRT CUSHION (III)	1	*
108 (4)		VXMW0032	MIC KIT	1	A.C.E.G
108 (4)		VXMW0038	MIC KIT	1	B.D.F
108 (4)		VKBW0010	SPIRAL TUBE	1	*
			CASE		
110 (2)		VMZW0142	FLEXIBLE PROTECTION SHEET	1	*

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
111 (2)		VMZW0145	ESD SHEET A	2	*
112 (2)		VMZW0159	ESD SHEET B	3	*
113 (2)		VMZW0160	ESD SHEET C	2	*
114 (2)		VMZW0107	ESD BARRIER D	1	*
115 (1)		VSCW0107	PRE-AMP SHIELD CASE	1	*
116 (1)		VSCW0106-1	PRE-AMP SHIELD COVER	1	*
117 (2)		VSCW0219	DL SHIELD PLATE	1	*
118 (2)		VSCW0196	AVR SHIELD CASE (A)	1	*
119 (2)		VSCW0197	AVR SHIELD CASE (B)	1	*
120 (2)		VMZW0233	AVR BARRIER (A)	1	*
121 (2)		VMZW0227	AVR BARRIER (B)	1	*
121 (2)		VSCW0215	SHIELD CASE (A)	1	*
123 (2)		VSCW0216	SHIELD CASE (B)	1	*
124 (2)		VSCW0218	SHIELD CASE (C)	1	*
125 (2)		VSCW0217	SHIELD CASE (D)	1	*
126 (2)		VMZW0236	BARRIER (A)	1	*
127 (2)		VMZW0237	BARRIER (B)	1	*
129 (2)		VSCW0211	MI.COM.SHIELD CASE (A)	1	*
130 (2)		VSCW0212	MI.COM.SHIELD CASE (B)	1	*
131 (2)		VSCW0213	MI.COM.SHIELD CASE (C)	1	*
132 (2)		VSCW0214	MI.COM.SHIELD CASE (D)	1	*
133 (2)		VMZW0234	MI.COM.BARRIER (A)	1	*
134 (2)		VMZW0235	MI.COM.BARRIER (B)	1	*
135 (1)		VSCW0114	MIC JACK SHIELD CASE	1	*
136 (1)		VMZW0126	JACK BARRIER	1	*
137 (4)		VMZW0121	E.V.F. BARRIER	1	*
			LABEL		
138 (2)		VQLW0882	DESCRIPTION LABEL	1	A.B.E.F
138 (2)		VQLW0904	DESCRIPTION LABEL	1	C.D.G
139 (2)		VQLW0629	CAUTION LABEL (E)	1	*
140 (1)		VQLW0633	CAUTION LABEL D	1	*
141 (1)		VQLW0074	CHASSIS LABEL	1	*
142 (1)		VQLW0615-1~	TARGET INDICATION LAVEL	1	*
		VQLW0627-1			*
142 (1)		VQLW0750~			*
		VQLW0755			*
143 (2)		VQLW0650	AUTO FOCUS LENS LABEL	1	A.E
143 (2)		VQLW0825	AUTO FOCUS LENS LABEL	1	D
143 (2)		VQLW0884	AUTO FOCUS LENS LABEL	1	C.G
143 (2)		VQLW0824	AUTO FOCUS LENS LABEL	1	B.F
144 (3)		VQLW0797	CAUTION LABEL (B)	1	A
144 (4)		VQLW0798	CAUTION LABEL (B)	1	E
144 (3)		VQLW0806	CAUTION LABEL (B)	1	D
144 (3)		VQLW0805	CAUTION LABEL (B)	1	G
144 (3)		VQLW0804	CAUTION LABEL (B)	1	C
144 (3)		VQLW0800	CAUTION LABEL (B)	1	F
144 (3)		VQLW0799	CAUTION LABEL (B)	1	B
145 (3)		VQLW0739	CAUTION LABEL	1	*
146 (4)		VQLW0652	CRT PIN INDICATION LABEL	1	*
147 (4)		VQLW0631	HIGH VOLTAGE CAUTION LABEL	1	*
148 (4)		VQLW0630	WARNING LABEL	1	*
149 (4)		VQLW0400	CAUTION LABEL	1	*
150 (4)		VQLW0802	EVF CAUTION LABEL	1	A.B
150 (4)		VQLW0803	EVF CAUTION LABEL	1	E.F
150 (4)		VQLW0808	EVF CAUTION LABEL	1	C,D
150 (4)		VQLW0809	EVF CAUTION LABEL	1	G
			SCREW		
			BINDING HEAD MACHINE		
			SCREWS		
151 (1)		XSB26+4FU	M2.6X4	5	*
152 (1)		XSB26+5FU	M2.6X5	4	*
153 (3)		XSB26+5FXK	M2.6X5	1	*
154(3,2,1)		XSB26+6FU	M2.6X6	22	*
155 (1)		XSB2+4FU	M2X4	1	*
156 (3)		XSB3+6FU	M3X6	3	*
157 (2)		XSB3+8FXK	M3X8	2	*
			BINDING HEAD TAPPING		
			SCREWS		
158 (2)		XTB26+5GFU	M2.6X5	2	*
159 (2)		XTB26+8GFU	M2.6X8	1	*
160 (1,3)		XTB26+18GFXK	M2.6X18	4	*
161 (4)		XTB26+20GFXK	M2.6X20	2	*

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			FLUSH HEAS MACHINE		
			SCREWS		
162 (2)		XSS26+4FU	M2.6X4	2	*
163 (4,3)		XSS26+4FXK	M2.6X4	6	*
165 (2)		XSS26+12FXK	M2.6X12	3	*
			FLSCH HEAD TAPPING		
			SCREWS		
166 (1,3)		XTS26+10GFXK	M2.6X10	4	*
			OVAL COUNTERSUNK HEAD		
167 (2)		XSC26+10FXK	MACHINE SCRES M2.6X10	2	*
			PAN HEAD TAPPING SCEWS		
168 (3)		XTN2+5GFU	M2X5	1	*
169 (3)		XTN2+6GFU	M2X6	2	*
170 (1,3)		XTN26+6GFU	M2.6X6	3	*
171 (1)		XTN3+6GFU	M3X6	2	*
			PRECISION MINI-SCREWS		
172 (2)		XQS2+A5JFXK	M2X5	2	*
173 (1)		XQS2+A5FXK	M2X5	2	*
174 (1,2)		XQS2+A68FXK	M2X6.8	5	*
175 (2)		XQS2+A7JFXK	M2X7	4	*
			PAN HEAD PRECISION MINI-		
176 (1)		XQN2+A15FYW	SCREWS M2X1.5	1	*
177 (1)		XUC4FY	E RING	1	*
			PACKING CASE		
178 (3)		VPKW0518	PACKING CASE	1	A
178 (3)		VPKW0530	PACKING CASE	1	D
178 (3)		VPKW0520	PACKING CASE	1	C
178 (3)		VPKW0528	PACKING CASE	1	B
179 (3)		VPGW0133	CUSHION TOP		*
180 (3)		VPGW0134	CUSHION BOTTOM	1	*
181 (3)		XZB31X70A02	POLY BAG FOR CAMERA HEAD	1	*
182 (3)		XZB17X45A02	POLY BAG FOR EVF	1	*
183 (3)		XZB9.5X40A02	POLY BAG FOR MIC KIT	1	*
184 (3)		XZB10X15A02	LIGHT FOOT ROLLER ASS'Y	1	C.D
185 (3)		VFBW0016	STRAP ANGLE	2	*
186 (3)		85X60 (mm)	POLY BAG FOR STRAP ANGLE	1	*
			(UNIPACK)		
187 (3)		VPQW0004	HANDLE	1	*
188 (3)		VQFW0228	FAN BAG KIT	1	A
188 (3)		VQFW0241	FAN BAG KIT	1	D
188 (3)		VQFW0230	FAN BAG KIT	1	C
188 (3)		VQFW0239	FAN BAG KIT	1	B

Electrical Replacement Parts List

Note:
1. Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
   Components identified by shade have special characteristics important for safety.
   When replacing any of these components, use only the original ones.
3. Unless otherwise specified:
   All resistors are in OHMS (Ω), 1/8w, 5% carbon, K=1,000 , M=1,000KΩ.
   All capacitors are in MICROFARADS (μF), 10%, P=μμF.
   All coils are in MICROHENRIES (μH), $m=10^3\mu$.
4. C.B.A: Circuit Board Assembly.
5. C.B: Circuit Board

SPECIAL NOTE All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "Electrostatically Sensitive (ES) Devices" section of this service manual.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
		VEPW0418	PROCESS C.B.A.	1	FOR 5MHz MODEL
		VEPW0418A	PROCESS C.B.A	1	FOR 6MHz MODEL
		VEPW0419	POWER SUPPLY C.B.A.	1	
		VEPW0420	DEFLECTION C.B.A.	1	
		VEPW0423	E.V.F. RELAY C.B.A.	1	
		VEPW0422	AUDIO C.B.A.	1	
		VEPW0425	REAR SIDE C.B.A.	1	
		VEPE0260A	POWER ZOOM SW C.B.A.	1	
		VEPW0476	VCR/CAMERA SW C.B.A.	1	
		VEPW0427	CONNECTOR C.B.A.	1	
		VEPW0421	MI. COM. PRINT C.B.A.	1	
		VEPW0426	KEY BOARD C.B.A.	1	
		VEPW0424	FRONT OPERATION C.B.A.	1	
		VEPW0280A	MIC JACK C.B.A.	1	
		VEPW0266B	E.V.F.C.B.A.	1	
		VEPW0261	E.V.F. LED C.B.A.	1	
	■		PROCESS C.B.A		
			INTEGRATED CIRCUIT (S)		
IC0301		AN2135S		1	
IC0302		AN2235S		1	
IC0303		AN2335S		1	
IC0304		MN8029S		1	
IC0305		MN6064RS		1	
IC0306		NJM2902M		1	
IC0308		NJM2902M		1	
IC0309		MN6172AKS		1	
IC0310		UPD4066BG		1	
			LC FILTER (S)		
LC0301		ELB4H009		1	FOR 5MHz MODEL
LC0301		ELB4H013		1	FOR 6MHz MODEL
LC0302		ELB4H015		1	FOR 6MHz MODEL
LC0303		ELB4N009		1	FOR 5MHz MODEL
LC0303		ELB4N010		1	FOR 6MHz MODEL
LC0304		ELB4H019		1	FOR 5MHz MODEL
LC0304		ELB4H015		1	FOR 6MHz MODEL
LC0305		ELB4H019		1	FOR 5MHz MODEL
LC0305		ELB4H015		1	FOR 6MHz MODEL
LC0306		ELB4K011		1	FOR 6MHz MODEL

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			DELAY LINE (S)		
DL0301		EFDVN645B15D		1	
DL0302		ELB4K013		1	
DL0303		EFDMT645C45E		1	FOR 5MHz MODEL
DL0303		EFDMT645C55E		1	FOR 6MHz MODEL
			CRYSTAL (S)		
X0301		VSXW0016		1	
			TRANSISTOR(S)		
Q0301		2SB709-Q.R	CHIP	1	
Q0302		2SB814-Q.R	CHIP	1	
Q0303		2SD601-Q.R	CHIP	1	
Q0306		2SD601-Q.R	CHIP	1	
Q0307		2SD601-Q.R	CHIP	1	
Q0308		2SD601-Q.R	CHIP	1	
Q0309		2SD601-Q.R	CHIP	1	
Q0311		2SD601-Q.R	CHIP	1	
Q0312		2SD601-Q.R	CHIP	1	
Q0313		2SD601-Q.R	CHIP	1	
Q0315		2SB709-Q.R	CHIP	1	
Q0354		2SD636-Q.R		1	
Q0316		2SD601-Q.R	CHIP	1	
Q0317		2SD814-S.T	CHIP	1	
Q0319		2SD601-Q.R	CHIP	1	
Q0320		2SD601-Q.R	CHIP	1	
Q0321		2SD601-Q.R	CHIP	1	
Q0322		2SD601-Q.R	CHIP	1	
Q0326		2SD601-Q.R	CHIP	1	
Q0327		2SD601-Q.R	CHIP	1	
Q0328		2SD601-Q.R	CHIP	1	
Q0329		2SD601-Q.R	CHIP	1	
Q0330		2SD601-Q.R	CHIP	1	
Q0331		2SD601-Q.R	CHIP	1	
Q0336		2SB709-Q.R	CHIP	1	
Q0337		2SD601-Q.R	CHIP	1	
Q0338		2SD601-Q.R	CHIP	1	
Q0341		2SD601-Q.R	CHIP	1	
Q0342		2SB709-Q.R	CHIP	1	
Q0343		2SB709-Q.R	CHIP	1	
			DIODE(S)		
D0302		MA151K	CHIP	1	
D0304		MA151K	CHIP	1	
D0306		M2303A	ZENER DIODE	1	
D0308		MA165		1	
D0309		MA151K	CHIP	1	
D0315		MA151K	CHIP	1	
D0319		MA151WA	CHIP	1	
D0320		MA151K	CHIP	1	
D0321		MA151K	CHIP	1	
D0322		MA151K	CHIP	1	
D0325		MA27W-A		1	
D0326		ERTD2FHL802S	Thermistor	1	
D0327		MA165K	CHIP	1	
				1	
D0329		MA27W-A		1	
D0330		MA27W-A		1	
D0331		MA27W-A		1	
D0334		MA27W-A		1	
D0332		MA27A		1	
D0335		MA27W-A		1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			RESISTOR(S)		
R0301		ERJ6GMYJ223	CHIP 22K	1	
R0302		ERJ6GMYJ102	CHIP 1K	1	
R0303		ERJ6GMYJ102	CHIP 1K	1	
R0304		ERJ6GMYJ102	CHIP 1K	1	
R0307		ERJ6GMYJ683	CHIP 68K	1	
R0308		ERJ6GMYJ393	CHIP 39K	1	
R0309		ERJ6GMYJ333	CHIP 33K	1	
R0310		ERJ6GMYJ103	CHIP 10K	1	
R0311		ERJ6GMYJ223	CHIP 22K	1	
R0312		ERJ6GMYJ102	CHIP 1K	1	
R0313		ERJ6GMYJ332	CHIP 3.3K	1	
R0314		ERJ6GMYJ122	CHIP 1.2K	1	
R0318		ERJ6GMY0R00	CHIP 0	1	
R0319		ERJ6GMYJ102	CHIP 1K	1	
R0320		ERJ6GMYJ123	CHIP 12K	1	
R0321		ERO10MKF3302	CHIP 33K	1	
R0322		ERO10MKF5601	CHIP 5.6K	1	
R0323		ERO10MKF1002	CHIP 10K	1	
R0325		ERJ6GMYJ103	CHIP 10K	1	
R0326		ERJ6GMYJ123	CHIP 12K	1	
R0327		ERJ6GMYJ124	CHIP 120K	1	
R0328		ERJ6GMYJ104	CHIP 100K	1	
R0329		ERJ6GMYJ223	CHIP 22K	1	
R0330		ERDS2TJ473	47K	1	
R0331		ERJ6GMYJ102	CHIP 1K	1	
R0332		ERJ6GMYJ223	CHIP 22K	1	
R0333		ERJ6GMYJ472	CHIP 4.7K	1	
R0334		ERJ6GMYJ471	CHIP 470	1	
R0335		ERJ6GMYJ103	CHIP 10K	1	
R0336		ERJ6GMYJ393	CHIP 39K	1	
R0337		ERJ6GMYJ472	CHIP 4.7K	1	
R0338		ERJ6GMYJ184	CHIP 180K	1	
R0339		ERDS2TJ103	10K	1	
R0340		ERJ6GMYJ100	CHIP 10	1	
R0341		ERJ6GMYJ103	CHIP 10K	1	
R0342		ERJ6GMYJ682	CHIP 6.8K	1	
R0343		ERJ6GMYJ472	CHIP 4.7K	1	
R0344		ERJ6GMYJ103	CHIP 10K	1	
R0345		ERJ6GMYJ682	CHIP 6.8K	1	
R0346		ERJ6GMY0R00	CHIP 0	1	
R0347		ERJ6GMYJ221	CHIP 220	1	
R0348		ERJ6GMYJ821	CHIP 820	1	
R0349		ERJ6GMYJ102	CHIP 1K	1	
R0353		ERJ6GMYJ271	CHIP 270	1	
R0354		ERJ6GMYJ102	CHIP 1K	1	
R0355		ERJ6GMY0R00	CHIP 0	1	
R0357		ERJ6GMYJ222	CHIP 2.2K	1	
R0358		ERJ6GMYJ152	CHIP 1.5K	1	
R0359		ERJ6GMYJ473	CHIP 47K	1	
R0360		ERJ6GMYJ753	CHIP 75K	1	
R0362		ERJ6GMYJ122	CHIP 1.2K	1	
R0363		ERJ6GMYJ302	CHIP 3K	1	
R0364		ERJ6GMYJ561	CHIP 560	1	
R0365		ERJ6GMYJ392	CHIP 3.9K	1	
R0366		ERJ6GMYJ182	CHIP 1.8K	1	
R0367		ERJ6GMYJ152	CHIP 1.5K	1	
R0368		ERJ6GMYJ103	CHIP 10K	1	
R0369		ERJ6GMYJ562	CHIP 5.6K	1	
R0371		ERJ6GMYJ103	CHIP 10K	1	
R0372		ERJ6GMYJ103	CHIP 10K	1	
R0373		ERJ6GMYJ183	CHIP 18K	1	
R0374		ERJ6GMYJ680	CHIP 68	1	
R0375		ERJ6GMYJ272	CHIP 2.7K	1	
R0376		ERJ6GMYJ103	CHIP 10K	1	
R0377		ERJ6GMYJ563	CHIP 56K	1	
R0379		ERJ6GMYJ123	CHIP 12K	1	
R0380		ERJ6GMYJ622	CHIP 6.2K	1	
R0381		ERJ6GMYJ622	CHIP 6.2K	1	
R0383		ERJ6GMYJ152	CHIP 1.5K	1	
R0384		ERJ6GMYJ102	CHIP 1K	1	
R0386		ERJ6GMYJ222	CHIP 2.2K	1	
R0387		ERJ6GMYJ222	CHIP 2.2K	1	
R0389		ERO10MKF8201	CHIP 8.2K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R0390		ERO10MKF4701	CHIP 4.7K	1	
R0391		ERO10MKF4752	CHIP 47.5K	1	
R0392		ERO10MKF5621	CHIP 5.62K	1	
R0394		ERJ6GMYJ183	CHIP 18K	1	
R0396		ERJ6GMYJ273	CHIP 27K	1	
R0397		ERJ6GMYJ223	CHIP 22K	1	
R0398		ERJ6GMYJ222	CHIP 2.2K	1	
R0399		ERJ6GMYJ102	CHIP 1K	1	
R3101		ERJ6GMYJ331	CHIP 330	1	
R3102		ERJ6GMYJ681	CHIP 680	1	
R3103		ERJ6GMYJ223	CHIP 22K	1	
R3104		ERJ6GMYJ183	CHIP 18K	1	
R3105		ERJ6GMYJ183	CHIP 18K	1	
R3106		ERJ6GMYJ223	CHIP 22K	1	
R3107		ERJ6GMYJ333	CHIP 33K	1	
R3108		ERJ6GMYJ102	CHIP 1K	1	
R3109		ERJ6GMYJ152	CHIP 1.5K	1	
R3110		ERJ6GMYJ272	CHIP 2.7K	1	
R3111		ERJ6GMYJ222	CHIP 2.2K	1	
R3113		ERJ6GMYJ473	CHIP 47K	1	
R3114		ERJ6GMYJ223	CHIP 22K	1	
R3115		ERJ6GMYJ223	CHIP 22K	1	
R3116		ERJ6GMYJ473	CHIP 47K	1	
R3117		ERJ6GMYJ473	CHIP 47K	1	
R3118		ERJ6GMYJ223	CHIP 22K	1	
R3119		ERJ6GMYJ103	CHIP 10K	1	
R3120		ERJ6GMYJ103	CHIP 10K	1	
R3121		ERJ6GMYJ391	CHIP 390	1	
R3130		ERJ6GMYJ221	CHIP 220	1	
R3124		ERJ6GMYJ151	CHIP 150	1	
R3131		ERJ6GMYJ103	CHIP 10K	1	
R3132		ERJ6GMYJ153	CHIP 15K	1	
R3133		ERJ6GMYJ153	CHIP 15K	1	
R3134		ERJ6GMYJ273	CHIP 27K	1	
R3135		ERJ6GMYJ472	CHIP 4.7K	1	
R3136		ERJ6GMYJ682	CHIP 6.8K	1	
R3137		ERJ6GMYJ223	CHIP 22K	1	
R3138		ERJ6GMYJ123	CHIP 12K	1	
R3143		ERJ6GMYJ562	CHIP 5.6K	1	
R3144		ERJ6GMYJ104	CHIP 100K	1	
R3145		ERJ6GMYJ472	CHIP 4.7K	1	
R3146		ERJ6GMYJ103	CHIP 10K	1	
R3147		ERJ6GMYJ103	CHIP 10K	1	
R3149		ERJ6GMYJ104	CHIP 100K	1	
R3150		ERJ6GMYJ563	CHIP 56K	1	
R3151		ERJ6GMYJ563	CHIP 56K	1	
R3152		ERJ6GMYJ682	CHIP 6.8K	1	
R3153		ERJ6GMYJ682	CHIP 6.8K	1	
R3154		ERJ6GMYJ332	CHIP 3.3K	1	
R3155		ERJ6GMYJ103	CHIP 10K	1	
R3156		ERJ6GMYJ823	CHIP 82K	1	
R3157		ERJ6GMYJ683	CHIP 68K	1	
R3158		ERJ6GMYJ104	CHIP 100K	1	
R3159		ERJ6GMYJ823	CHIP 82K	1	
R3160		ERJ6GMYJ823	CHIP 82K	1	
R3161		ERJ6GMYJ683	CHIP 68K	1	
R3162		ERJ6GMYJ104	CHIP 100K	1	
R3163		ERJ6GMYJ823	CHIP 82K	1	
R3164		ERJ6GMYJ102	CHIP 1K	1	
R3165		ERJ6GMYJ392	CHIP 3.9K	1	
R3166		ERJ6GMYJ392	CHIP 3.9K	1	
R3167		ERJ6GMYJ562	CHIP 5.6K	1	
R3168		ERJ6GMYJ561	CHIP 560	1	
R3169		ERJ6GMYJ561	CHIP 560	1	
R3170		ERJ6GMYJ154	CHIP 150K	1	
R3171		ERJ6GMYJ103	CHIP 10K	1	
R3172		ERJ6GMYJ103	CHIP 10K	1	
R3173		ERJ6GMYJ153	CHIP 15K	1	
R3174		ERJ6GMYJ223	CHIP 22K	1	
R3175		ERJ6GMYJ153	CHIP 15K	1	
R3176		ERJ6GMYJ392	CHIP 3.9K	1	
R3177		ERJ6GMYJ392	CHIP 3.9K	1	
R3193		ERJ6GMYJ223	CHIP 22K	1	
R3194		ERJ6GMYJ563	CHIP 56K	1	
R3195		ERJ6GMYJ103	CHIP 10K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R3196		ERJ6GMYJ103	CHIP 10K	1	
R3197		ERJ6GMYJ823	CHIP 82K	1	
R3198		ERJ6GMYJ103	CHIP 10K	1	
R3199		ERJ6GMYJ105	CHIP 1M	1	
R3200		ERJ6GMYJ223	CHIP 22K	1	
R3201		ERJ6GMYJ123	CHIP 12K	1	
R3202		ERJ6GMYJ153	CHIP 15K	1	
R3204		ERJ6GMYJ103	CHIP 10K	1	
R3206		ERJ6GMYJ105	CHIP 1M	1	
R3207		ERJ6GMYJ562	CHIP 5.6K	1	
R3208		ERJ6GMYJ563	CHIP 56K	1	
R3209		ERJ6GMYJ103	CHIP 10K	1	
R3210		ERJ6GMYJ103	CHIP 10K	1	
R3211		ERJ6GMYJ563	CHIP 56K	1	
R3212		ERJ6GMYJ563	CHIP 56K	1	
R3213		ERJ6GMYJ103	CHIP 10K	1	
R3214		ERJ6GMYJ222	CHIP 2.2K	1	
R3215		ERJ6GMYJ222	CHIP 2.2K	1	
R3216		ERJ6GMYJ103	CHIP 10K	1	
R3217		ERJ6GMYJ103	CHIP 10K	1	
R3218		ERJ6GMYJ223	CHIP 22K	1	
R3219		ERJ6GMYJ473	CHIP 47K	1	
R3220		ERJ6GMYJ562	CHIP 5.6K	1	
R3221		ERJ6GMYJ103	CHIP 10K	1	
R3222		ERJ6GMYJ154	CHIP 150K	1	
R3223		ERJ6GMYJ154	CHIP 150K	1	
R3224		ERJ6GMYJ562	CHIP 5.6K	1	
R3225		ERJ6GMYJ103	CHIP 10K	1	
R3226		ERJ6GMYJ563	CHIP 56K	1	
R3227		ERJ6GMYJ102	CHIP 1K	1	
R3228		ERJ6GMYJ152	CHIP 1.5K	1	
R3229		ERJ6GMYJ102	CHIP 1K	1	
R3230		ERJ6GMYJ681	CHIP 680	1	
R3233		ERJ6GMYJ122	CHIP 1.2K	1	
R3234		ERJ6GMYJ333	CHIP 33K	1	
R3235		ERJ6GMYJ822	CHIP 8.2K	1	
R3236		ERJ6GMYJ223	CHIP 22K	1	
R3237		ERG-1SJ4R7	4.7	1	
R3239		ERJ6GMYJ333	CHIP 33K	1	
R3240		ERJ6GMYJ473	CHIP 47K	1	
R3241		ERJ6GMYJ102	CHIP 1K	1	
R3243		ERJ6GMYJ392	CHIP 3.9K	1	
R3244		ERJ6GMYJ562	CHIP 5.6K	1	
R3245		ERJ6GMYJ272	CHIP 2.7K	1	
R3247		ERJ6GMYJ473	CHIP 47K	1	
R3248		ERJ6GMYJ104	CHIP 100K	1	
R3249		ERJ6GMYJ123	CHIP 12K	1	
R3250		ERJ6GMYJ123	CHIP 12K	1	
R3251		ERJ6GMYJ682	CHIP 6.8K	1	
R3252		ERJ6GMYJ682	CHIP 6.8K	1	
R3253		ERJ6GMYJ123	CHIP 12K	1	
R3256		ERJ6GMYJ223	CHIP 22K	1	
R3257		ERJ6GMYJ103	CHIP 10K	1	
R3261		ERJ6GMYJ102	CHIP 1K	1	
R3262		ERJ6GMYJ222	CHIP 2.2K	1	
R3263		ERJ6GMYJ822	CHIP 8.2K	1	
R3264		ERJ6GMYJ562	CHIP 5.6K	1	
R3265		ERJ6GMYJ222	CHIP 2.2K	1	
R3282		ERJ6GMYJ332	CHIP 3.3K	1	
R3283		ERJ6GMYJ332	CHIP 3.3K	1	
R3284		ERJ6GMYJ102	CHIP 1K	1	
R3285		ERJ6GMYJ102	CHIP 1K	1	
R3287		ERJ6GMYJ683	CHIP 68K	1	
R3288		ERJ6GMYJ683	CHIP 68K	1	
R3289		ERJ6GMYJ151	CHIP 150	1	
R3290		ERJ6GMYJ102	CHIP 1K	1	
R3291		ERJ6GMYJ222	CHIP 2.2K	1	
R3292		ERJ6GMYJ473	CHIP 47K	1	
R3293		ERJ6GMYJ103	CHIP 10K	1	
R3294		ERJ6GMYJ683	CHIP 68K	1	
R3301		ERJ6GMYJ824	CHIP 820K	1	
R3302		ERJ6GMYJ103	CHIP 10K	1	
R3303		ERO10MKF1502	CHIP 15K	1	
R3304		ERO10MKF2211	CHIP 2.21K	1	
R3305		ERJ6GMYJ391	CHIP 390	1	
R3307		ERJ6GMYJ333	CHIP 33K	1	
R3308		ERJ6GMYJ333	CHIP 33K	1	
R3309		ERJ6GMYJ103	CHIP 10K	1	
R3310		ERJ6GMYJ183	CHIP 18K	1	
R3311		ERJ6GMY0R00	CHIP 0	1	
R3312		ERJ6GMYJ153	CHIP 15K	1	
R3313		ERJ6GMYJ473	CHIP 47K	1	
R3314		ERJ6GMYJ392	CHIP 3.9K	1	
R3316		ERJ6GMYJ103	CHIP 10K	1	
R3317		ERJ6GMYJ224	CHIP 220K	1	
R3318		ERJ6GMYJ224	CHIP 220K	1	
R3319		ERDS2TJ103	10K	1	
R3323		ERDS2TJ272	2.7K	1	
R3324		ERDS2TJ472	4.7K	1	
R3325		ERDS2TJ822	8.2K	1	
R3326		ERJ6GMY0R00	CHIP 0	1	
R3329		ERJ6GMY0R00	CHIP 0	1	
R3330		ERDS2TJ102	1K	1	
R3331		ERTD2FHL332S	THERMISTER 3.3K	1	
R3332		ERDS2TJ273	27K	1	
R3333		ERDS2TJ273	27K	1	
R3334		ERDS2TJ153	15K	1	
R9999		ERDS2T-0T	0	3	
R3335		ERDS2TJ102	1K	1	
R3336		ERDS2TJ683	68K	1	
R3337		ERDS2TJ560	56	1	
R3341		ERDS2TJ223	22K	1	
R3342		ERDS2TJ683	68K	1	
R3349		ERDS2TJ391	390	1	
R3350		ERDS2TJ102	1K	1	
R3351		ERTD2FHL802S		1	
			VARIABLE RESISTOR(S)		
VR0301		EVML4GA00B14	10KB	1	
VR0303		EVML4GA00B15	100KB	1	
VR0304		EVML4GA00B15	100KB	1	
VR0305		EVML4GA00B15	100KB	1	
VR0306		EVML4GA00B15	100KB	1	
VR0307		EVML4GA00B15	100KB	1	
VR0308		EVML4GA00B15	100KB	1	
VR0309		EVML4GA00B15	100KB	1	
VR0310		EVML4GA00B15	100KB	1	
VR0311		EVML4GA00B53	5KB	1	
VR0312		EVML4GA00B14	10KB	1	
VR0313		EVML4GA00B15	100KB	1	
VR0314		EVML4GA00B15	100KB	1	
VR0315		EVML4GA00B15	100KB	1	
VR0316		EVML4GA00B14	10KB	1	
VR0317		EVML4GA00B53	1KB	1	
VR0318		EVML4GA00B14	10KB	1	
VR0320		EVML4GA00B15	100KB	1	
VR0321		EVML4GA00B15	100KB	1	
VR0322		EVML4GA00B15	100KB	1	
VR0323		EVML4GA00B14	10KB	1	
VR0324		EVML4GA00B23	2KB	1	
VR0325		EVML4GA00B52	500B	1	
VR0326		EVML4GA00B52	500B	1	
VR0327		EVML4GA00B33	3KB	1	
VR0329		EVML4GA00B14	10KB	1	
VR0330		EVML4GA00B14	10KB	1	
VR0331		EVML4GA00B14	10KB	1	
VR0332		EVML4GA00B14	10KB	1	
VR0333		EVML4GA00B14	10KB	1	
VR0334		EVML4GA00B14	10KB	1	
VR0335		EVML4GA00B14	10KB	1	
VR0336		EVML4GA00B14	10KB	1	
VR0337		EVML4GA00B15	100KB	1	
VR0338		EVML4GA00B15	100KB	1	
VR0339		EVML4GA00B15	100KB	1	
VR0340		EVML4GA00B15	100KB	1	
VR0341		EVML4GA00B15	100KB	1	
VR0342		EVML4GA00B15	100KB	1	
VR0343		EVML4GA00B15	100KB	1	
VR0344		EVML4GA00B15	100KB	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
VR0348		EVML4GA00B33	3KB	1	
VR0349		EVML4GA00B33	3KB	1	
VR0350		EVML4GA00B23	2KB	1	
VR0351		EVML4GA00B23	2KB	1	
VR0352		EVML4GA00B14	10KB	1	
			CAPACITOR(S)		
C0301		ECUM1H103KBN	CHIP CERAMIC 50V 10000P	1	
C0305		ECEA1HKN0R1	ELECTROLYTIC 50V 0.1	1	
C0306		ECEA1HKS0R1	ELECTROLYTIC 50V 0.1	1	
C0307		ECUM1H680KN	CHIP CERAMIC 50V 68P	1	FOR 5MHz MODEL
C0307		ECUM1H470KN	CHIP CERAMIC 50V 47P	1	FOR 6MHz MODEL
C0308		ECUM1E563KBM	CHIP CERAMIC 25 0.056	1	
C0309		ECEA1CKS100	ELECTROLYTIC 16V 10	1	
C0310		ECEA1CKS100	ELECTROLYTIC 16V 10	1	
C0311		ECEA1HKS010	ELECTROLYTIC 50V 1	1	
C0312		ECSF1CD105D	TANTALUM 16V 1	1	
C0313		ECEA1CKS100	ELECTROLYTIC 16V 10	1	
C0314		ECEA1AF470	ELECTROLYTIC 10V 47	1	
C0315		ECUM1H100DN	CHIP CERAMIC 50V 10P	1	
C0316		ECUM1H100DN	CHIP CERAMIC 50V 10P	1	
C0317		ECUM1H103KBN	CHIP CERAMIC 50V 10000P	1	
C0318		ECUM1H103KBN	CHIP CERAMIC 50V 10000P	1	
C0319		ECSF1CD105D	TANTALUM 16V 1	1	
C0320		ECEA1HKN2R2	ELECTROLYTIC 50V 2.2	1	
C0321		ECUM1H102KBM	CHIP CERAMIC 50V 1000P	1	
C0324		ECUM1E563KBM	CHIP CERAMIC 25V 0.056	1	
C0325		ECUM1H151KN	CHIP CERAMIC 50V 150P	1	
C0327		ECEA1AKS470	ELECTROLYTIC 10V 47	1	
C0328		ECUM1H330KN	CHIP CERAMIC 50V 33P	1	
C0329		ECUM1H101KN	CHIP CERAMIC 50V 100P	1	
C0330		ECUM1H103KBN	CHIP CERAMIC 50V 10000P	1	
C0334		ECUM1E563KBM	CHIP CERAMIC 25V 0.056	1	
C0337		ECEA1AF470	ELECTROLYTIC 10V 47	1	
C0338		ECUM1H103KBN	CHIP CERAMIC 10V 10000P	1	
C0339		ECEA1CKN100	ELECTROLYTIC 16V 10	1	
C0340		ECUM1E563KBM	CHIP CERAMIC 25V 0.056	1	
C0341		ECUM1E563KBM	CHIP CERAMIC 25V 0.056	1	
C0342		ECUM1H103KBN	CHIP CERAMIC 50V 10000P	1	
C0344		ECEA0JU471	ELECTROLYTIC 6.3V 470	1	
C0345		ECEA1HKS010	ELECTROLYTIC 50V 1	1	
C0347		ECCF1H00D	CERAMIC 50V 10P	1	
C0348		ECUM1H100DN	CHIP CERAMIC 50V 10P	1	
C0349		ECEA0JKS470	ELECTROLYTIC 6.3V 47	1	
C0352		ECUM1E563KBM	CHIP CERAMIC 25V 0.056	1	
C0353		ECUM1E563KBM	CHIP CERAMIC 25V 0.056	1	
C0354		ECUM1E563KBM	CHIP CERAMIC 25V 0.056	1	
C0355		ECSF1AE476	TANTALUM 10V 47	1	
C0356		ECEA1AF470	ELECTROLYTIC 10V 47	1	
C0357		ECUM1E104ZFN	CHIP CERAMIC 25V 0.1	1	
C0358		ECEA0JKS470	ELECTROLYTIC 6.3V 47	1	
C0359		ECUM1E104ZFN	CHIP CERAMIC 25V 0.1	1	
C0360		ECUM1E104ZFN	CHIP CERAMIC 25V 0.1	1	
C0362		ECEA1CKS100	ELECTROLYTIC 16V 10	1	
C0363		ECEA1CKS100	ELECTROLYTIC 16V 10	1	
C0364		ECEA0JKS470	ELECTROLYTIC 6.3V 47	1	
C0365		ECEA1HKS010	ELECTROLYTIC 50V 1	1	
C0366		ECEA1HKS010	ELECTROLYTIC 50V 1	1	
C0367		ECUM1H150KN	CHIP CERAMIC 50V 15P	1	
C0368		ECEA1CKS100	ELECTROLYTIC 16V 10	1	
C0369		ECUM1H151KN	CHIP CERAMIC 50V 150P	1	
C0371		ECSF1CD474	TANTALUM 16V 0.47	1	
C0372		ECSF1CD474	TANTALUM 16V 0.47	1	
C0373		ECEA1HKS2R2	ELECTROLYTIC 50V 2.2	1	
C0374		ECEA1HKS2R2	ELECTROLYTIC 50V 2.2	1	
C0377		ECSF1AE476	TANTALUM 10V 47	1	
C0378		ECUM1H180KN	CHIP CERAMIC 50V 18P	1	
C0379		ECV1ZW40X53T	TRIMMER 40P	1	
C0380		ECUM1H101KN	CHIP CERAMIC 50V 100P	1	
C0381		ECEA1CKS100	ELECTROLYTIC 16V 10	1	
C0382		ECEA1CKS100	ELECTROLYTIC 16V 10	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C0383		ECEA1CKS100	ELECTROLYTIC 16V 10	1	
C0384		ECEA1CKS100	ELECTROLYTIC 16V 10	1	
C0386		ECEA1HKNR47	ELECTROLYTIC 50V 0.47	1	
C0387		ECEA1HKNR47	ELECTROLYTIC 50V 0.47	1	
C0399		ECUM1E104ZFN	CHIP CERAMIC 25V 0.1	1	
C3100		ECUM1H103KBN	CHIP CERAMIC 50V 10000P	1	
C3101		ECUM1H103KBN	CHIP CERAMIC 50V 10000P	1	
C3102		ECEA0JKS101	ELECTROLYTIC 6.3V 100	1	
C3103		ECUM1E104ZFN	CHIP CERAMIC 25V 0.1	1	
C3104		ECEA1CKS100	ELECTROLYTIC 16V 10	1	
C3105		ECSF0JE476	TANTALUM 6.3V 47	1	
C3106		ECEA1CKS100	ELECTROLYTIC 16V 10	1	
C3107		ECUM1H103KBN	CHIP CERAMIC 50V 10000P	1	
C3108		ECUM1H103KBN	CHIP CERAMIC 50V 10000P	1	
C3109		ECUM1H390KN	CHIP CERAMIC 50V 39P	1	
C3110		ECUM1H151KN	CHIP CERAMIC 50V 150P	1	
C3112		ECUM1H220KN	CHIP CERAMIC 50V 22P	1	
C3113		ECUM1H680KN	CHIP CERAMIC 50V 68P	1	FOR 5MHz MODEL
C3113		ECUM1H470KN	CHIP CERAMIC 50V 47P	1	FOR 6MHz MODEL
C3114		ECUM1H101KN	CHIP CERAMIC 50V 100P	1	
C3117		ECEA1CKS100	ELECTROLYTIC 16V 10	1	
C3118		ECEA1CKS100	ELECTROLYTIC 16V 10	1	
C3119		ECEA1EU221	ELECTROLYTIC 25V 220	1	
C3120		ECEA1EU471	ELECTROLYTIC 25V 470	1	
C3124		ECUM1H331KN	CHIP CERAMIC 50V 330P	1	
C3125		ECUM1H221KN	CHIP CERAMIC 50V 220P	1	
C3126		ECUM1H820KN	CHIP CERAMIC 50V 82P	1	
C3127		ECUM1H030CCN	CHIP CERAMIC 50V 3P	1	
C3131		ECEA1AKN100	ELECTROLYTIC 10V 10	1	
C3135		ECSF1CD474	TANTALUM 16V 0.47	1	
C3111		ECUM1H561KCN	CHIP CERAMIC 50V 560P	1	
C3136		ECUM1H470KCN	CHIP CERAMIC 50V 47P	1	
C3139		ECSF0JE106	TANTALUM 6.3V 10	1	
C3140		ECSF0JE106	TANTALUM 6.3V 10	1	
C3142		ECUM1H471KN	CHIP CERAMIC 50V 470P	1	
C3143		ECCF1H220JC	CERAMIC 50V 22P	1	
C3144		ECUM1H103KBN	CHIP CERAMIC 50V 10000P	1	
C3145		ECCF1H330J	CERAMIC 50V 33P	1	
C3148		ECKF1H331KB	50V 330	1	
C3151		ECSF0JE106	6.3V 10	1	
C3152		ECSF1AE106	TANTALUM 10V 10	1	
C3154		ECEA0JE106	ELECTROLYTIC 6.3V 10	1	
C3155		ECCF1H560J	50V 56	1	
C3156		ECCF1H820J	50V 82	1	
C3157		ECSF0JE106	6.3V 10	1	
			COIL(S)		
L0301		EL0405SR150K	15uH	1	
L0302		EL0405SR100K	10uH	1	
L0303		EL0405SR100K	10uH	1	
L0304		EL0405SR560K	56uH	1	
L0306		EL0405SR100K	10uH	1	
L0307		EL0405SR100K	10uH	1	
L0308		EL0405SR121K	120uH	1	
L0309		EL0405SR271K	270uH	1	
L0310		EL0405SR6R8K	6.8uH	1	
L0311		EL0405SR6R8K	6.8uH	1	
L0312		EL0405SR100K	10uH	1	
L0313		EL0405SR121K	120uH	1	
L0314		EL0405SR221K	220uH	1	
L0315		EL0405SR271K	270uH	1	
L0316		EL0405SR150K	15uH	1	
L0319		EL0405SR471K	470uH	1	
L0320		EL0405SR271K	270uH	1	
L0321		EL0405SR330K	33uH	1	
L0322		EL0405SR150K	15uH	1	
L0323		EL0405SR150K	15uH	1	
L0326		EL0405SR560K	56uH	1	
L0327		EL0405SR471K	470uH	1	
L0328		FL7H470K	47uH	1	
L0329		FL7H470K	47uH	1	
			FUSE(S)		

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
F0301		XBA1H16NU100		1	⚠
			MISCELLANEOUS		
B0301		VJPW0048	10P B TO B CONNECTOR	1	
B0302		VJPW0058	24P B TO B CONNECTOR	1	
B0303		VJPW0052	14P B TO B CONNECTOR	1	
B0304		VJPW0062G	28P B TO B CONNECTOR	1	
			MISCELLANEOUS		
		VSCW0219	DL SHIELD PLATE	1	
		VSCW0215	SHIELD CASE (A)	1	
		VSCW0216	SHIELD CASE (B)	1	
		VSCW0218	SHIELD CASE (C)	1	
		VSCW0217	SHIELD CASE (D)	1	
		VMZW0236	BARRIER (A)	1	
		VMZW0237	BARRIER (B)	1	
	■		POWER SUPPLY C.B.A.		
			INTEGRATED CIRCUIT (S)		
IC3501		AN5910S		1	
			TRANSISTOR (S)		
Q3501		2SA885-R.S		1	⚠
Q3505		2SD601-Q.R.S	CHIP	1	
Q3507		2SA1096-R		1	⚠
			DIODE (S)		
D3501		MA165		1	
D3502		ERA82-02		1	
D3503		ERA82-02		1	
D3504		MA151K	CHIP	1	
D3506		MA151K	CHIP	1	
D3507		MZ303A	ZENER DIODE	1	
D3512		MA165		1	
			RESISTOR(S)		
R3501		ER010MKF5602	CHIP 56.0K	1	
R3502		ER010MKF3322	CHIP 33.2K	1	
R3503		ER010MKF2212	CHIP 22.1K	1	
R3504		ER010MKF1212	CHIP 12.1K	1	
R3505		ERJ6GMYJ472	CHIP 4.7K	1	
R3506		ERJ6GMYJ152	CHIP 1.5K	1	
R3511		ERJ6GMYJ332	CHIP 3.3K	1	
R3512		ERJ6GMYJ473	CHIP 47.0K	1	
R3513		ERJ6GMYJ623	CHIP 62K	1	
R3514		ERJ6GMYJ124	CHIP 120.0K	1	
R3519		ERJ6GMYJ152	CHIP 1.5K	1	
R3520		ERDS2TJ472	CHIP 4.7K	1	
R3521		ER010MKF2742	CHIP 27.4K	1	
R3522		ER010MKF1002	CHIP 10.0K	1	
R3527		ERJ6GMYJ203	CHIP 20.0K	1	
R3528		ERJ6GMYJ103	CHIP 10.0K	1	
R3530		ERDS2TJ124	CHIP 120K	1	
RO		ERDS2T-OT	0	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			VARIABLE RESISTOR(S)		
VR3501		EVML4GA00B53	5KB	1	
VR3502		EVML4GA00B14	10KB	1	
			CAPACITOR(S)		
C3501		ECEA1VKS3R3	ELECTROLYTIC 35.0V 3.3	1	
C3502		ECUM1H153KBN	CHIP CERAMIC 50.0V 15000P	1	
C3503		ECUM1H563KBN	CHIP CERAMIC 50.0V 0.056	1	
C3504		ECUM1E223KBN	CHIP CERAMIC 25V 22000P	1	
C3505		ECUM1H331KN	CHIP CERAMIC 50.0V 330P	1	
C3507		ECEA1AU221	ELECTROLYTIC 10.0V 220	1	
C3509		ECEA1AU221	ELECTROLYTIC 10.0V 220	1	
C3513		ECUM1H561KBN	CHIP CERAMIC 50.0V 560P	1	
C3515		ECEA1EU101	ELECTROLYTIC 25.0V 100	1	
C3518		ECUM1H331KN	CHIP CERAMIC 50.0V 330P	1	
C3520		ECEA1AU221	ELECTROLYTIC 10.0V 220	1	
C3523		ECEA1AU221	ELECTROLYTIC 10.0V 220	1	
C3524		ECEA0JKS101	ELECTROLYTIC 6.3V 100	1	
C3512		ECSF1VE105	TANTALUM 35.0V 1	1	
C3519		ECUM1E223KBN	CHIP CERAMIC 25.0V 22000P	1	
			COIL(S)		
L3501		ELC10E006	220uH	1	
L3502		ELC08G014	50uH	1	
L3503		ELC08G014	50uH	1	
L3504		ELC10E006	220uH	1	
L3505		ELC08G014	50uH	1	
			MISCELLANEOUS		
		VEKW0830	LUG TERMINAL ASS'Y	1	
		VSCW0196	AVR SHIELD CASE (A)	1	
		VSCW0197	AVR SHIELD CASE (B)	1	
		VMZW0233	AVR BARRIER (A)	1	
		VMZW0227	AVR BARRIER (B)	1	
		VJHW0010	10P COMB	1	
	■		DEFLECTION C.B.A.		
			INTEGRATED CIRCUIT(S)		
IC0601		NJM3415M		1	
IC0602		NJM2902M		1	
IC0603		NJM3415M		1	
			TRANSISTOR(S)		
Q0601		2SB788-R.S		1	
Q0602		2SD601-Q.R	CHIP	1	
Q0603		2SD601-Q.R	CHIP	1	
Q0604		2SD601-Q.R	CHIP	1	
Q0605		2SD1081-C		1	
Q0606		2SD602-Q.R	CHIP	1	
Q0607		2SD601-Q.R	CHIP	1	
Q0608		2SB788-R.S		1	
Q0609		2SD601-Q.R	CHIP	1	
Q0610		2SD1081-C		1	
Q0611		2SD973-R.S		1	
Q0612		2SD601-Q.R	CHIP	1	
Q0613		2SB788-R.S		1	
Q0614		2SB788-R.S		1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
Q0615		2SD814-Q.R	CHIP	1	
Q0616		2SB709-Q.R	CHIP	1	
Q0617		2SD601-Q.R	CHIP	1	
Q0618		2SB709-Q.R	CHIP	1	
Q0622		2SD602-R.S	CHIP	1	
Q0623		2SB710-R.S	CHIP	1	
			DIODE(S)		
D0601		ERB43-04		1	
D0602		MA151K	CHIP	1	
D0603		MA27A		1	
D0604		MA151K	CHIP	1	
D0605		MA151K	CHIP	1	
D0606		MA151A	CHIP	1	
			RESISTOR(S)		
R0601		ERJ6GMYJ683	CHIP 68.0K	1	
R0602		ERJ6GMYJ104	CHIP 100.0K	1	
R0603		ERJ6GMYJ222	CHIP 2.2K	1	
R0604		ERJ6GMYJ823	CHIP 82.0K	1	
R0605		ERJ6GMYJ624	CHIP 620.0K	1	
R0606		ERJ6GMYJ183	CHIP 18.0K	1	
R0607		ERJ6GMYJ183	CHIP 18.0K	1	
R0608		EROS2CKF4303	430.0K	1	
R0609		ERJ6GMYJ223	CHIP 22.0K	1	
R0610		ERJ6GMYJ391	CHIP 390.0	1	
R0611		ERJ6GMYJ330	CHIP 33.0	1	
R0612		ERJ6GMYJ103	CHIP 10.0K	1	
R0613		ERJ6GMYJ153	CHIP 15.0K	1	
R0614		ERJ6GMYJ153	CHIP 15.0K	1	
R0615		ERJ6GMYJ183	CHIP 18.0K	1	
R0616		ERJ6GMYJ223	CHIP 22.0K	1	
R0617		ERJ6GMYJ224	CHIP 220.0K	1	
R0618		ERJ6GMYJ474	CHIP 470.0K	1	
R0619		ERJ6GMYJ153	CHIP 15.0K	1	
R0620		ERJ6GMYJ153	CHIP 15.0K	1	
R0621		ERJ6GMYJ103	CHIP 10.0K	1	
R0622		ERJ6GMYJ223	CHIP 22.0K	1	
R0623		ERJ6GMYJ471	CHIP 470.0	1	
R0624		ERJ6GMYJ474	CHIP 470.0K	1	
R0625		ERJ6GMYJ223	CHIP 22.0K	1	
R0626		ERJ6GMYJ222	CHIP 2.2K	1	
R0627		ERJ6GMYJ392	CHIP 3.9K	1	
R0628		ERJ6GMYJ222	CHIP 2.2K	1	
R0629		ERJ6GMYJ103	CHIP 10K	1	
R0633		ERJ6GMYJ223	CHIP 22.0K	1	
R0634		ERJ8GCYJ334	CHIP 330.0K	1	
R0635		ERJ6GMYJ123	CHIP 12.0K	1	
R0636		ERJ6GMYJ224	CHIP 220.0K	1	
R0637		ERJ6GMYJ390	CHIP 39.0	1	
R0638		ERJ6GMYJ472	CHIP 4.7K	1	
R0639		ERJ6GMYJ102	CHIP 1.0K	1	
R0640		ERJ6GMYJ151	CHIP 150.0	1	
R0641		ERJ6GMYJ180	CHIP 18.0	1	
R0642		ERJ6GMYJ221	CHIP 220.0	1	
R0643		ERJ6GMYJ181	CHIP 180.0	1	
R0644		ERJ6GMYJ221	CHIP 220.0	1	
R0645		ERJ6GMYJ222	CHIP 2.2K	1	
R0646		ERJ6GMYJ221	CHIP 220.0	1	
R0647		ERJ6GMYJ274	CHIP 270.0K	1	
R0648		ERJ6GMYJ332	CHIP 3.3K	1	
R0649		ERJ6GMYJ563	CHIP 56.0K	1	
R0650		ERJ6GMYJ103	CHIP 10.0K	1	
R0651		ERJ6GMYJ331	CHIP 330.0	1	
R0652		ERJ6GMYJ153	CHIP 15.0K	1	
R0653		ERJ6GMYJ153	CHIP 15.0K	1	
R0654		ERJ6GMYJ103	CHIP 10.0K	1	
R0655		ERJ6GMYJ184	CHIP 180.0K	1	
R0656		ERJ6GMYJ333	CHIP 33.0K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R0657		ERJ6GMYJ223	CHIP 22.0K	1	
R0658		ERJ6GMYJ102	CHIP 1.0K	1	
R0659		ERJ6GMYJ103	CHIP 10.0K	1	
R0660		ERJ6GMYJ223	CHIP 22.0K	1	
R0662		ERJ6GMYJ473	CHIP 47.0K	1	
R0663		ERJ6GMYJ101	CHIP 100.0	1	
R0668		ERJ6GMYJ101	CHIP 100.0	1	
			VARIABLE RESISTOR(S)		
VR0601		EVML1GA00B54	50KB	1	
VR0602		EVML1GA00B25	200KB	1	
VR0603		EVML1GA00B14	10KB	1	
VR0604		EVML1GA00B16	1MB	1	
VR0605		EVML1GA00B55	500KB	1	
VR0606		EVML1GA00B34	30KB	1	
VR0607		EVML1GA00B12	100B	1	
VR0608		EVML1GA00B23	2KB	1	
VR0609		EVML1GA00B23	2KB	1	
VR0610		EVML1GA00B14	10KB	1	
			CAPACITOR(S)		
C0601		ECEA2AU010	ELECTROLYTIC 100.0V 1	1	
C0602		ECEA1AKS470	ELECTROLYTIC 10.0V 47	1	
C0603		ECUV1H222KBN	CHIP CERAMIC 50.0V 2200P	1	
C0604		ECQV1H393JZ	MYLAR 50.0V 0.039	1	
C0605		ECQV1H104JZ	MYLAR 50.0V 0.1	1	
C0606		ECQV1H104JZ	MYLAR 50V 0.1	1	
C0607		ECQV1H104JZ	MYLAR 50V 0.1	1	
C0608		ECEA1CKS100	ELECTROLYTIC 16.0V 10	1	
C0609		ECSF1CD105	TANTALUM 16.0V 1	1	
C0610		ECQB1H103KZ	MYLAR 50.0V 0.01	1	
C0611		ECEA1CKS100	ELECTROLYTIC 16.0V 10	1	
C0612		ECUV1H331KCN	CHIP CERAMIC 50.0V 330P	1	
C0613		ECEA1CKS100	ELECTROLYTIC 16.0V 10	1	
C0614		ECQV1H393JZ	MYLAR 50.0V 0.039	1	
C0615		ECEA1CKS100	ELECTROLYTIC 16.0V 10	1	
C0616		ECQE10472MV	MYLAR 1.0KV 0.0047	1	
C0617		ECEA1AU471	ELECTROLYTIC 10.0V 470	1	
C0618		ECQM2272JZ	MYLAR 200.0V 0.0027	1	
C0619		ECEA2AU3R3	ELECTROLYTIC 100.0V 3.3	1	⚠
C0620		ECEA1AKS470	ELECTROLYTIC 10.0V 47	1	
C0621		ECEA2WS010	ELECTROLYTIC 450.0V 1	1	
C0622		ECQM4472MZ	MYLAR 200V 0.0047	1	
C0623		ECQE2473KS	MYLAR 200.0V 0.047	1	
C0624		ECEA2AU010	ELECTROLYTIC 100.0V 1	1	⚠
C0625		ECQE1104KN	MYLAR 100.0V 0.1	1	
C0626		ECEA0JKS470	ELECTROLYTIC 6.3V 47	1	
C0627		ECEA0JKS470	ELECTROLYTIC 6.3V 47	1	
C0628		ECEA0JKS470	ELECTROLYTIC 6.3V 47	1	
C0629		ECEA1AU101	ELECTROLYTIC 10V 100	1	
C0630		ECEA1AU101	ELECTROLYTIC 10.0 100	1	
C0631		ECQP1331JZ	MYLAR 100.0V 330P	1	
C0632		ECUV1H391KN	CHIP CERAMIC 50.0V 390P	1	
C0633		ECQV1H104JZ	MYLAR 50.0V 0.1	1	
C0634		ECEA0JKS470	ELECTROLYTIC 6.3V 47	1	
C0635		ECEA1AKS470	ELECTROLYTIC 10.0V 47	1	
C0636		ECEA1CKS100	ELECTROLYTIC 16.0V 10	1	
C0637		ECKD2H331KB2	CERAMIC 500.0V 330P	1	
C0638		ECUV1H221KN	CHIP CERAMIC 50.0V 220P	1	
C0639		ECUV1H101KN	CHIP CERAMIC 50.0V 100P	1	
C0640		ECUV1E104ZFN	CHIP CERAMIC 25.0V 0.1	1	
C0642		ECUV1H221KN	CHIP CERAMIC 50.0V 220P	1	
			COEL(S)		
L0601		VLQ7H101K	100uH	1	
L0602		EIR7QG012Q	10mH	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
L0603		EIR7QH005Q	33mH	1	
			F.B.T.		
T0601		TLF01006		1	⚠
			SWITCH(S)		
SW0601		VSSW0029	VHS COMPATI SW	1	
			SHORT PLUG(S)		
P0601		VJPW0004	4P	1	
P0602		VJPW0002	2P	1	
P0603		EMCS0250Z	2P	1	
P0605		EMCS0450Z	4P	1	
P0606		EMCS0650Z	6P	1	
P0607		VJPW0002	2P	1	
			MISCELLANEOUS		
B0601		VJPW0059	24P B TO B CONNECTOR	1	
B0602		VJPW0051	12P B TO B CONNECTOR	1	
B0603		VEKW0922	TUBE SOCKET ASS'Y	1	
	■		E.V.F.RELAY C.B.A.		
			INTEGRATED CIRCUIT(S)		
IC9001		AN2510S		1	
			DIODE(S)		
D9001		MA1120	ZENOR DIODE	1	
D9002		MA1120	ZENOR DIODE	1	
D9003		MA1120	ZENOR DIODE	1	
D9004		MA1120	ZENOR DIODE	1	
D9005		MA1120	ZENOR DIODE	1	
			RESISTOR(S)		
R9001		ERJ6GMYJ222	CHIP 2.2K	1	
R9002		ERJ6GMYJ622	CHIP 6.2K	1	
R9003		ERJ6GMYJ102	CHIP 1.0K	1	
R9004		ERJ6GMYJ623	CHIP 62.0K	1	
R9005		ERJ6GMYJ561	CHIP 560.0	1	
R9006		ERJ6GMYJ103	CHIP 10.0K	1	
R9007		ERJ6GMYJ823	CHIP 82.0K	1	
R9008		ERJ6GMYJ470	CHIP 47.0	1	
R9009		ERJ6GMYJ4R7	CHIP 4.7K	1	
R9010		ERJ6GMYJ512	CHIP 5.1K	1	
R9011		ERJ6GMY0R00	CHIP 0	1	
R9012		ERJ6GMYJ101	CHIP 100.0K	1	
R9014		ERJ6GMYJ473	CHIP 47.0K	1	
			VARIABLE RESISTOR(S)		
VR9001		EVML4GA00B33	3.0KB	1	
VR9002		EVML4GA00B15	100.0KB	1	
VR9003		EVML4GA00B13	1.0KB	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			CAPACITOR(S)		
C9001		ECEA1CKS100	ELECTROLYTIC 16.0V 10	1	
C9002		ECQP1152JZ	MYLAR 100.0V 0.0015	1	
C9003		ECEA1HKNR22	ELECTROLYTIC 50.0V 0.22	1	
C9004		ECUV1H911KN	CHIP CERAMIC 50.0V 910P	1	
C9005		ECQV1H104JZ	MYLAR 50.0V 0.1	1	
C9006		ECQB1H223JZ	MYLAR 50.0V 0.022	1	
C9007		ECUV1H221KCN	CHIP CERAMIC 50.0V 220P	1	
C9008		ECEA0JKS470	ELECTROLYTIC 6.3V 47	1	
C9009		ECEA0JKS470	ELECTROLYTIC 6.3V 47	1	
C9010		ECQV1H684JZ	MYLAR 50.0V 0.68	1	
C9011		ECEA0JK221	ELECTROLYTIC 6.3V 220	1	
C9013		ECSF1AE476	TANTALUM 10.0V 47	1	
C9014		ECEA0JK221	ELECTROLYTIC 6.3V 220	1	
			COIL(S)		
L9002		VLQ7H101K	100uH	1	
L9003		ELO405SR221K	220uH	1	
			SHORT PLUG(S)		
P9001		EMCS0250Z	2P	1	
P9002		EMCS10502L	10P	1	
			MISCELLANEOUS		
B9001		VJPW0063G	28P B TO B CONNECTOR	1	
B9002		VJPW0061G	26P B TO B CONNECTOR	1	
	■		AUDIO C.B.A.		
			INTEGRATED CIRCUIT(S)		
IC401		NJM4558MD		1	
			TRANSISTOR(S)		
Q0401		2SD601-R	CHIP	1	
Q0402		2SC2405-S	CHIP	1	
Q0403		2SC2405-S	CHIP	1	
Q0404		2SD601-R	CHIP	1	
Q0405		2SC2405-S	CHIP	1	
Q0406		2SD601-R	CHIP	1	
Q0407		2SD601-R	CHIP	1	
Q0408		2SD601-R	CHIP	1	
Q0409		2SB709-Q.R	CHIP	1	
Q0410		2SD601-R	CHIP	1	
			DIODE(S)		
D0401		OA90-AR		1	
D0402		OA90-AR		1	
D0403		MA27T-A		1	
D0404		OA90-AR		1	
D0405		OA90-AR		1	
D0406		MA27T-A		1	
D0407		MA1120	ZENER DIODE	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
D0408		MA1120	ZENER DIODE	1	
			RESISTOR(S)		
R0401		ERJ6GMYJ560	CHIP 56.0	1	
R0402		ERJ8GCYJ104	CHIP 100.0K	1	
R0403		ERJ6GMYJ101	CHIP 100.0	1	
R0404		ERJ6GMYJ104	CHIP 100.0K	1	
R0405		ERJ8GCYJ104	CHIP 100.0K	1	
R0406		ERJ6GMYJ274	CHIP 270.0K	1	
R0407		ERJ6GMYJ681	CHIP 680.0	1	
R0408		ERJ6GMYJ103	CHIP 10.0K	1	
R0409		ERJ6GMYJ272	CHIP 2.7K	1	
R0410		ERJ6GMYJ472	CHIP 4.7K	1	
R0410		ERJ6GMYJ101	CHIP 100.0	1	
R0412		ERJ6GMYJ103	CHIP 10.0K	1	
R0413		ERJ6GMYJ682	CHIP 6.8K	1	
R0414		ERJ6GMYJ102	CHIP 1.0K	1	
R0415		ERJ6GMYJ393	CHIP 39.0K	1	
R0416		ERJ6GMYJ103	CHIP 10.0K	1	
R0417		ERJ8GCYJ104	CHIP 100.0K	1	
R0418		ERJ8GCYJ104	CHIP 100.0K	1	
R0419		ERJ6GMYJ101	CHIP 100.0	1	
R0420		ERJ6GMYJ274	CHIP 270.0K	1	
R0421		ERJ6GMYJ681	CHIP 680.0	1	
R0422		ERJ6GMYJ104	CHIP 100.0K	1	
R0423		ERJ6GMYJ103	CHIP 10.0K	1	
R0424		ERJ6GMYJ272	CHIP 2.7K	1	
R0425		ERJ6GMYJ102	CHIP 1K	1	
R0426		ERJ6GMYJ152	CHIP 1.5K	1	
R0427		ERJ6GMYJ681	CHIP 680.0	1	
R0428		ERJ6GMYJ560	CHIP 56.0	1	
R0429		ERJ6GMYJ102	CHIP 1.0K	1	
R0430		ERJ6GMYJ681	CHIP 680.0	1	
R0431		ERJ6GMYJ102	CHIP 1.0K	1	
R0432		ERJ6GMYJ102	CHIP 1.0K	1	
R0433		ERJ6GMYJ272	CHIP 2.7K	1	
R0434		ERJ6GMYJ272	CHIP 2.7K	1	
R0435		ERJ6GMYJ470	CHIP 47.0	1	
R0436		ERJ6GMYJ102	CHIP 1.0K	1	
R0437		ERJ6GMYJ472	CHIP 4.7K	1	
R0438		ERJ6GMYJ102	CHIP 1.0K	1	
R0439		ERJ6GMYJ103	CHIP 10.0K	1	
R0440		ERJ6GMYJ102	CHIP 1.0K	1	
R0441		ERJ6GMYJ103	CHIP 10.0K	1	
R0442		ERJ6GMYJ103	CHIP 10.0K	1	
R0443		ERJ6GMYJ822	CHIP 8.2K	1	
R0444		ERJ6GMYJ562	CHIP 5.6K	1	
R0445		ERJ6GMYJ101	CHIP 100.0	1	
R0446		ERJ6GMYJ103	CHIP 10.0K	1	
R0447		ERJ6GMYJ121	CHIP 120.0	1	
R0448		ERJ6GMYJ560	CHIP 56.0	1	
R0449		ERJ6GMY0R00	CHIP 0.0	1	
R0450		ERJ6GMY0R00	CHIP 0.0	1	
R0451		ERJ6GMY0R00	CHIP 0.0	1	
			CAPACITOR(S)		
C0401		ECEA1HKN010	ELECTROLYTIC 50.0V 1	1	
C0402		ECEA1HKS010	ELECTROLYTIC 50.0V 1	1	
C0403		ECEA0JKS470	ELECTROLYTIC 6.3V 47	1	
C0404		ECEA1HKS010	ELECTROLYTIC 50.0V 1		
C0405		ECUV1H680JN	CHIP CERAMIC 50.0V 68P	1	
C0406		ECEA1HKS2R2	ELECTROLYTIC 50.0V 2.2	1	
C0407		ECEA1CKS100	ELECTROLYTIC 16.0V 10	1	
C0408		ECEA1AKS470	ELECTROLYTIC 10.0V 47	1	
C0409		ECEA1CKS220	ELECTROLYTIC 16.0V 22	1	
C0410		ECEA1AK101	ELECTROLYTIC 10.0V 100	1	
C0411		ECEA1HKS010	ELECTROLYTIC 50.0V 1	1	
C0412		ECUV1H680JN	CHIP CERAMIC 50.0V 68P	1	
C0413		ECEA1HKS2R2	ELECTROLYTIC 50.0V 2.2	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C0414		ECEA1HKS010	ELECTROLYTIC 50.0V 1	1	
C0415		ECEA0JKS470	ELECTROLYTIC 6.3V 47	1	
C0416		ECEA1HKN010	ELECTROLYTIC 50.0V 1	1	
C0417		ECEA1HKS010	ELECTROLYTIC 50.0V 1	1	
C0418		ECEA0JKS101	ELECTROLYTIC 6.3V 100	1	
C0419		ECEA1HKS010	ELECTROLYTIC 50.0V 1	1	
C0420		ECEA1CKS100	ELECTROLYTIC 16.0V 10	1	
C0421		ECEA1CKS100	ELECTROLYTIC 16.0V 10	1	
C0422		ECEA1AK101	ELECTROLYTIC 10.0V 100	1	
C0423		ECEA0JKS101	ELECTROLYTIC 6.3V 100	1	
C0424		ECEA0JKS101	ELECTROLYTIC 6.3V 100	1	
C0425		ECQV1H104JZ	MYLAR 50.0V 0.1	1	
C0426		ECEA0JKS101	ELECTROLYTIC 6.3V 100	1	
C0427		ECEA0JSS471	ELECTROLYTIC 6.3V 470	1	
			COIL(S)		
L0401		ELEA102KA	1mH	1	
L0402		EL0405SR101K	100mH	1	
			SWITCH(S)		
SW0401		VSSW0025	ST/MONO SELECTOR SW	1	
			SHORT PLUG(S)		
P0401		VJPW0015L	15P	1	
P0402		VJPW0004L	4P	1	
P0403		VJPW0009L	9P	1	
			MISCELLANEOUS		
B0401		VJPW0065	22P F.P.C. CONNECTOR	1	
B0402		VEKW0932	3P CONNECTOR ASS'Y	1	
B0403		VEKW0956	3P CONNECTOR ASS'Y	1	
B0404		VJJW0007	JACK	1	
		VEKW0095	LUG TERMINAL ASS'Y	1	
	■		REAR SIDE C.B.A.		
			RESISTOR(S)		
R0501		ERDS2TJ561	560	1	
R0502		ERDS2TJ562	5.6K	1	
R0503		ERDS2TJ332	3.3K	1	
R0504		ERDS2TJ472	4.7K	1	
			DIODE(S)		
D0501		TLSG208	POWER LAMP	1	
			VARIABLE RESISTOR(S)		
VR0501		VRVW0001	RB VOLUM	1	
VR0502		VRVW0001	RB VOLUM	1	
			SWITCH(S)		
SW0501		VSSW0025	N/P SW	1	
SW0502		VSSW0021	GAIN UP SW	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			MISCELLANEOUS		
B0501		VJPW0049	10P B TO B CONNECTOR	1	
		VMZW0156	BARRIER	1	
	■		POWER ZOOM SW C.B.A.		
			TRANSISTOR(S)		
Q0801		2SD601-Q.R	CHIP	1	
Q0802		2SD601-Q.R	CHIP	1	
Q0803		2SD601-Q.R	CHIP	1	
Q0804		2SD601-Q.R	CHIP	1	
			RESISTOR(S)		
R0801		ERJ6GMYJ472	CHIP 4.7K	1	
R0802		ERJ6GMYJ560	CHIP 56.0	1	
R0803		ERJ6GMYJ103	CHIP 10.0K	1	
R0804		ERJ6GMYJ103	CHIP 10.0K	1	
R0805		ERJ6GMYJ822	CHIP 8.2K	1	
R0806		ERJ6GMYJ822	CHIP 8.2K	1	
R0807		ERJ6GMYJ331	CHIP 330	1	
			CAPACITOR(S)		
C0801		ECEA1ASS221	ELECTROLYTIC 10.0V 220	1	
			SHORT PLUG(S)		
P0802		VJPW0002	2P	1	
			MISCELLANEOUS		
		VEKW0929	9P CONNECTOR ASS'Y	1	
	■		VCR/CAMERA SW C.B.A.		
			SWITCH(S)		
			DIODE(S)		
D0801		MA1120		1	
D0802		MA1120		1	
		VSSW0019	VCR/CAMERA SELECTOR SW	1	
			MISCELLANEOUS		
		VEKW0692-1	2P CONNECTOR ASS'Y	1	
	■		CONNECTOR C.B.A.		
			MISCELLANEOUS		
		VLPW0053	14P B TO B CONNECTOR	2	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
	■		MI. COM. PRINT C.B.A.		
			INTEGRATED CIRCUIT(S)		
IC0701		AN6914S		1	
IC0702		UPD7508G-665		1	
IC0703		AN90B82S		1	
IC0704		MB88303		1	
IC0705		UPD4066BG		1	
IC0706		MN1287VWH		1	
IC0707		UPD7508G-667		1	
IC0708		TC5517AFL		1	
IC0709		AN90B82S		1	
IC0710		AN90B82S		1	
			TRANSISTOR(S)		
Q0701		2SD601-Q.R	CHIP	1	
Q0702		2SD601-Q.R	CHIP	1	
Q0703		2SD601-Q.R	CHIP	1	
Q0704		2SD601-Q.R	CHIP	1	
Q0705		2SD601-Q.R	CHIP	1	
Q0706		2SD601-Q.R	CHIP	1	
Q0707		2SD601-Q.R	CHIP	1	
Q0708		2SD601-Q.R	CHIP	1	
Q0709		2SB709-Q.R	CHIP	1	
Q0710		2SD601-Q.R	CHIP	1	
Q0711		2SD601-Q.R	CHIP	1	
Q0712		2SD601-Q.R	CHIP	1	
Q0713		2SD601-Q.R	CHIP	1	
Q0714		2SD601-Q.R	CHIP	1	
Q0717		2SD601-Q.R	CHIP	1	
Q0718		2SD601-Q.R	CHIP	1	
Q0719		2SD601-Q.R	CHIP	1	
Q0723		2SD973-R.S	CHIP	1	
			DIODE(S)		
D0701		MA151K	CHIP	1	
D0702		MA151K	CHIP	1	
D0703		MA151K	CHIP	1	
D0704		MA151K	CHIP	1	
D0705		MA165K		1	
D0706		MA1120	ZENER DIODE	1	
D0707		MA151K	CHIP	1	
D0708		MA1120	ZENER DIODE	1	
D0709		1S954		1	
D0710		MA151K	CHIP	1	
D0711		MA151K	CHIP	1	
D0712		MA151K	CHIP	1	
D0713		MA151K	CHIP	1	
D0714		MA151K	CHIP	1	
D0715		MA151K	CHIP	1	
D0716		MA151K	CHIP	1	
D0717		MA151K	CHIP	1	
D0718		MA151K	CHIP	1	
D0721		MA151K	CHIP	1	
D0722		MA151K	CHIP	1	
D0723		MA1047-M	ZENER DIODE	1	
			CRYSTAL(S)		
X0701		VSX0094		1	
X0702		VSX0094		1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			RESISTOR(S)		
R0701		ERJ6GMYJ562	CHIP 5.6K	1	
R0702		ERJ6GMYJ103	CHIP 10.0K	1	
R0703		ERJ6GMYJ223	CHIP 22.0K	1	
R0704		ERJ6GMYJ683	CHIP 68.0K	1	
R0705		ERJ6GMYJ102	CHIP 1.0K	1	
R0706		ERJ6GMYJ104	CHIP 100.0K	1	
R0707		ERJ6GMYJ104	CHIP 100.0K	1	
R0708		ERJ6GMYJ123	CHIP 12.0K	1	
R0709		ERJ6GMYJ223	CHIP 22.0K	1	
R0710		ERJ6GMYJ103	CHIP 10.0K	1	
R0711		ERJ6GMYJ563	CHIP 56.0K	1	
R0712		ERJ6GMYJ104	CHIP 100.0K	1	
R0713		ERJ6GMYJ562	CHIP 5.6K	1	
R0714		ERJ6GMYJ220	CHIP 22.0K	1	
R0715		ERJ6GMYJ220	CHIP 22.0K	1	
R0716		ERJ6GMYJ152	CHIP 1.5K	1	
R0717		ERJ6GMYJ472	CHIP 4.7K	1	
R0718		ERJ6GMYJ220	CHIP 22.0	1	
R0719		ERJ6GMYJ562	CHIP 5.6K	1	
R0720		ERJ6GMYJ472	CHIP 4.7K	1	
R0721		ERJ6GMYJ562	CHIP 5.6K	1	
R0722		ERJ6GMYJ472	CHIP 4.7K	1	
R0723		ERJ6GMYJ563	CHIP 56.0K	1	
R0724		ERJ6GMYJ563	CHIP 56.0K	1	
R0725		ERJ6GMYJ563	CHIP 56.0K	1	
R0726		ERJ6GMYJ563	CHIP 56.0K	1	
R0727		ERJ6GMYJ103	CHIP 10.0K	1	
R0728		ERJ6GMYJ103	CHIP 10.0K	1	
R0729		ERTD2FHL802S	THERMISTOR 8K	1	
R0730		ERJ6GMYJ563	CHIP 56.0K	1	
R0731		ERJ6GMYJ223	CHIP 22.0K	1	
R0732		ERJ6GMYJ103	CHIP 10.0K	1	
R0733		ERJ6GMYJ222	CHIP 2.2K	1	
R0734		ERJ6GMYJ103	CHIP 10.0K	1	
R0735		ERJ6GMYJ103	CHIP 10.0K	1	
R0736		ERJ6GMYJ104	CHIP 100.0K	1	
R0737		ERJ6GMYJ152	CHIP 1.5K	1	
R0738		ERJ6GMYJ102	CHIP 1.0K	1	
R0739		ERJ6GMYJ102	CHIP 1.0K	1	
R0741		ERJ6GMYJ563	CHIP 56.0K	1	
R0742		ERJ6GMYJ564	CHIP 560.0K	1	
R0743		ERJ6GMYJ563	CHIP 56.0K	1	
R0744		ERJ6GMYJ123	CHIP 12.0K	1	
R0745		ERJ6GMYJ563	CHIP 56.0K	1	
R0746		ERJ6GMYJ563	CHIP 56.0K	1	
R0747		ERJ6GMYJ563	CHIP 56.0K	1	
R0748		ERJ6GMYJ563	CHIP 56.0K	1	
R0749		ERJ6GMYJ563	CHIP 56.0K	1	
R0750		ERJ6GMYJ563	CHIP 56.0K	1	
R0751		ERDS2TJ224	220.0K	1	
R0752		ERJ6GMYJ104	CHIP 100.0K	1	
R0753		ERDS2TJ224	220.0K	1	
R0754		ERJ6GMYJ563	CHIP 56.0K	1	
R0755		ERJ6GMYJ223	CHIP 22.0K	1	
R0756		ERJ6GMYJ563	CHIP 56.0K	1	
R0757		ERJ6GMYJ471	CHIP 470.0	1	
R0758		ERJ6GMYJ563	CHIP 56.0K	1	
R0759		ERJ6GMYJ563	CHIP 56.0K	1	
R0760		ERJ6GMYJ563	CHIP 56.0K	1	
R0761		ERJ6GMYJ563	CHIP 56.0K	1	
R0762		ERJ6GMYJ563	CHIP 56.0K	1	
R0763		ERJ6GMYJ103	CHIP 10.0K	1	
R0764		ERTD2FHL802S	THERMISTOR 8K	1	
R0765		ERJ6GMYJ563	CHIP 56.0K	1	
R0766		ERJ6GMYJ562	CHIP 5.6K	1	
R0767		ERJ6GMYJ472	CHIP 4.7K	1	
R0768		ERJ6GMYJ562	CHIP 5.6K	1	
R0769		ERJ6GMYJ392	CHIP 3.9K	1	
R0770		ERJ6GMYJ103	CHIP 10.0K	1	
R0771		ERJ6GMYJ822	CHIP 8.2K	1	
R0772		ERJ6GMYJ152	CHIP 1.5K	1	
R0773		ERJ6GMYJ563	CHIP 56.0K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R0774		ERJ6GMYJ563	CHIP 56.0K	1	
R0775		ERJ6GMYJ102	CHIP 1.0K	1	
R0776		ERJ6GMYJ100	CHIP 10.0	1	
R0777		ERJ6GMYJ471	CHIP 470.0	1	
R0780		ERJ6GMYJ563	CHIP 56.0K	1	
R0781		ERJ6GMYJ101	CHIP 100.0	1	
R0785		ERDS2TJ102	1K	1	
			VARIABLE RESISTOR(S)		
VR0701		EVML4GA00B15	100.0KB	1	
VR0702		EVML4GA00B23	2.0KB	1	
VR0703		EVML4GA00B23	2.0KB	1	
VR0704		EVML4GA00B15	100.0KB	1	
			CAPACITOR(S)		
C0701		ECUM1E104ZFN	CHIP CERAMIC 25.0V 0.1	1	
C0702		ECEA0JKN330	ELECTROLYTIC 6.3V 33	1	
C0703		ECUM1H103KBN	CHIP CERAMIC 50.0V 10000P	1	
C0704		ECUM1H103KBN	CHIP CERAMIC 50.0V 10000P	1	
C0705		ECUM1H330KN	CHIP CERAMIC 50.0V 33P	1	
C0706		ECR-GA050M30B	TRIMMER 50.0V	1	
C0707		ECUM1H330KN	CHIP CERAMIC 50.0V 33P	1	
C0708		ECUM1H101KN	CHIP CERAMIC 50.0V 100P	1	
C0709		ECCF1H101KW	CERAMIC 50.0V 100P	1	
C0710		ECEA0JKS470	ELECTROLYTIC 6.3V 47	1	
C0711		ECEA0JKS220	ELECTROLYTIC 6.3V 22	1	
C0712		ECEA0JKS101	ELECTROLYTIC 6.3V 100	1	
C0713		ECUM1H103KBN	CHIP CERAMIC 50.0V 10000P	1	
C0714		ECEA0JKS220	ELECTROLYTIC 6.3V 22	1	
C0715		ECCF1H101KW	CERAMIC 50.0V 100P	1	
C0716		ECSF0JE476	TANTALUM 6.3V 47	1	
C0717		ECUM1H330KN	CHIP CERAMIC 50.0V 33P	1	
C0718		ECUM1H330KN	CHIP CERAMIC 50.0V 33P	1	
C0719		ECUM1H330KN	CHIP CERAMIC 50.0V 33P	1	
C0720		ECEA0JKS101	ELECTROLYTIC 6.3V 100	1	
C0721		ECUM1E563KBN	CHIP CERAMIC 25.0V 0.056	1	
C0722		ECSF0JE226	TANTALUM 6.3V 22	1	
C0724		ECCF1H221J	CERAMIC 50V 220	1	
			COIL(S)		
L0701		ELEH102KA	1mH	1	
L0702		EL0405SK101K	100mH	1	
			SWITCH(S)		
SW0702		VSSW0030	INTERVAL SW	1	
SW0703		EVQQSN04T	P/P SW	1	
SW0704		EVQQSN04T	SLOW SW	1	
SW0705		EVQQSN04T	REV SW	1	
SW0706		EVQQSN04T	CUE SW	1	
SW0707		EVQQSN04T	INSERT SW	1	
SW0708		EVQQS107K	R. SW	1	
SW0709		EVQQS107K	S. SW	1	
SW0710		EVQQS205K	TITLE REV SW	1	
SW0711		EVQQS205K	SEL SW	1	
SW0712		EVQQS205K	SET SW	1	
SW0713		EVQQS205K	ADJ SW	1	
SW0714		VSSW0031	EXT. TITLE SW	1	
			SHORT PLUG(S)		
P0701		VJPW0002L	2P	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			MISCELLANEOUS		
B0701		EMCSK22S00A2	22P B TO B CONNECTOR	1	
B0702		VJPW0050	12P B TO B CONNECTOR	1	
B0703		VJPW0060G	26P B TO B CONNECTOR	1	
B0704		VJPW0021	22P F.P.C CONNECTOR	1	
	■		KEY BOARD C.B.A.		
			DIODE(S)		
D7201		MA151K	CHIP	1	
D7202		MA151K	CHIP	1	
D7203		MA151K	CHIP	1	
D7204		MA151K	CHIP	1	
D7205		MA151K	CHIP	1	
D7206		MA151K	CHIP	1	
D7207		MA151K	CHIP	1	
D7208		MA151K	CHIP	1	
D7209		MA151K	CHIP	1	
D7210		MA151K	CHIP	1	
D7211		MA151K	CHIP	1	
D7212		MA151K	CHIP	1	
D7213		MA151K	CHIP	1	
D7214		MA151K	CHIP	1	
D7215		LN01801C	LED	1	
			MISCELLANEOUS		
		VJBW0338	F.P.C.	1	
		VMZW0238	LED SPACER (A)	1	
		VMZW0142	F.P.C. SHEET	1	
	■		FRONT OPERATION C.B.A.		
			MISCELLANEOUS		
		VEKW0928	15P CONNECTOR ASS'Y	1	
			SWITCH(S)		
		VSSW0042	FADE SW	1	
	■		MIC JACK C.B.A.		
			MISCELLANEOUS		
		VJJW0006	MIC JACK	1	
		VMZW0126	JACK BARRIER	1	
		VSCW0114	JACK SHIELD CASE	1	
		VEPW0955	39 CONNECTOR ASS'Y	1	
			MISCELLANEOUS		
		S4165	NEWVICON	1	FOR 5MHz MODEL
		S4310	NEWVICON	1	FOR 6MHz MODEL
		ELY18A216A	DY ASS'Y	1	
		VEKW0924	CAMERA CABLE ASS'Y	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
		VEKW0724	BIAS LIGHT ASS'Y	1	
		VEKW0920	12P SOCKER ASS'Y	1	
		VEKW0699	2P CONNECTOR ASS'Y	1	
		VEKW0442	F.P.C. ASS'Y	1	
		VEKW0930	JACK ASS Y	1	
		NR44	CELL	2	
		VEPW0417	PRE-AMP CIRCUIT BOAD ASS'Y	1	
		VEPW0487	PRINT CIRCUIT BOAD ASS'Y	1	
		VEPW0485	B PRINT CIRCUIT BOAD ASS'Y	1	
		VEPW0523	POWER SUPPLY.A.PRINT	1	
			CIRCUIT BOAD ASS'Y		
	■		E.V.F. C.B.A.		
			TRANSISTOR(S)		
Q0901		2SD662-R		1	
Q0902		2SB709-R.S.T	CHIP	1	
Q0903		2SD968A-R	CHIP	1	⚠
Q0906		2SD601-Q.R	CHIP	1	
Q0907		2SD601-Q.R	CHIP	1	
Q0908		2SD601-Q.R	CHIP	1	
			DIODE(S)		
D0901		MA151K	CHIP	1	
D0902		MA162		1	
D0903		S1B01-01		1	
			RESISTOR(S)		
R0901		ERJ8GCYJ223	CHIP 22.0K	1	
R0902		ERJ6GMYJ332	CHIP 3.3K	1	
R0903		ERJ8GCYJ122	CHIP 1.2K	1	
R0904		ERDS2TJ561	560.0	1	
R0905		ERDS2TJ470	47.0	1	
R0906		ERJ8GCYJ102	CHIP 1.0K	1	
R0907		ERDS2TJ103	10.0K	1	
R0908		ERJ6GMYJ333	CHIP 33.0K	1	
R0909		ERJ6GMYJ220	CHIP 22.0	1	
R0910		ERJ8GCYJ105	CHIP 1.0M	1	
R0911		ERJ8GCYJ105	CHIP 1.0M	1	
R0912		ERJ8GCYJ152	CHIP 1.5K	1	
R0916		ERJ6GMYJ152	CHIP 1.5K	1	
R0922		ERJ6GMYJ102	CHIP 1.0K	1	
R0923		ERJ6GMYJ823	CHIP 82.0K	1	
R0924		ERJ6GMYJ823	CHIP 82.0K	1	
R0925		ERJ6GMYJ102	CHIP 1.0K	1	
R0926		ERJ6GMYJ562	CHIP 5.6K	1	
R0927		ERJ8GCYJ102	CHIP 1.0K	1	
R0928		ERDS2TJ273	27.0K	1	
R0929		ERD25VJ225	2.2M	1	
R0930		ERD25VJ225	2.2M	1	
R0931		ERD25VJ185	1.8M	1	
			VARIABLE RESISTOR(S)		
R0932		ERJ6GMY0R00	0	1	
R0933		ERJ6GMY0R00	0	1	
R0934		ERJ6GMY0R00	0	1	
R0935		ERJ6GMY0R00	0	1	
R0936		ERJ6GMY0R00	0	1	
R0937		ERJ6GMY0R00	0	1	
VR0901		EVML4GA00B23	2KB	1	
VR0902		EVM31GA00B55	500KB	1	
VR0903		EVM4GGA00B26	2MB	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			CAPACITOR(S)		
C0901		EVEA1AK470	ELECTROLYTIC 10.0V 47	1	
C0902		ECUV1H331KM	CHIP CERAMIC 50.0V 330P	1	
C0903		ECEA1CS471S	ELECTROLYTIC 16.0V 470	1	
C0904		ECEA1AK470	ELECTROLYTIC 10.0V 47	1	
C0906		ECEA1CU220	ELECTROLYTIC 16.0V 22	1	
C0907		ECEA1JS100	ELECTROLYTIC 63.0V 10	1	
C0908		VCAMZ50V473J	MYLAR 50.0V 0.047	1	
C0909		ECQE2104KS	MYLAR 250.0V 0.1	1	
C0910		VCAMZ100V682J	MYLAR 100.0V 0.0068	1	⚠
C0911		VCCW0002	CERAMIC 1.0KV 3900P	1	⚠
C0912		VCCW0001	CERAMIC 1.0KV 1500P	1	
C0913		ECQE2104KS	MYLAR 250.0V 0.1	1	
C0914		ECSF1CD105	TANTALUM 16.0V 1	1	
C0915		ECSF1CD105	TANTALUM 16.0V 1	1	
			COIL(S)		
L0901		VLQ9H391K	390uH	1	
L0902		ELH-5L165	LINEALITY COIL	1	
L0904		EIR7QG013B		1	
			F.B.T.		
T0901		ETF16L25A		1	
			SWITCH(S)		
SW0901		VSSW0026	R.L. SELECTOR SW	1	
			SHORT PLUG(S)		
P0901		EMCS0650Z	6P	1	
P0902		VJPW0002	2P	1	
P0903		EMCS0250Z	2P	1	
P0904		EMCS0450Z	4P	1	
			MISCELLANEOUS		
		VEKW0716	CRT SOCKET ASS'Y	1	
		VEKW0722	TALLY LED ASS'Y	1	
	■		E.V.F. LED C.B.A.		
			DIODE(S)		
D0904		TLG124A	LED	1	
			MISCELLANEOUS		
		VEKW0882	2P CONNECTOR ASS'Y	1	
		VEKW0831	GROUND SPRING ASS'Y	1	
		VMXW0065	LED SPACER	1	
			MISCELLANEOUS		
		M03JHB9WW	CRT	1	⚠
		ELY10V301B	DY ASS'Y	1	⚠
		VEKW0921	12P CABLE ASS'Y	1	

Auto Focus Section (x8)

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
1(5)		VKUW0051	HOOD CAP	1	
2(5)		VKUW0039	LENS HOOD	1	
3(5)		VMGW0067	FOCUS RING RUBBER	1	
4(5)		VKGW0560	DISTANCE INDICATOR RING	1	
5(5)		VXDW0020	LENS BARREL RING ASS'Y	1	
6(5)		VYKW0766	MANUAL ZOOM RING ASS'Y	1	
7(5)		VXDW0008	MASTER LENS ASS'Y	1	
8(5)		VMSW0051	MASTER LENS HOLDER	1	
9(5)		VMAW0299	INSTALLATION PLATE	1	
10(5)		VKGW0561	A.F. COVER B	1	
11(5)		VKGW0562	A.F. LENS COVER A	1	
12(5)		VFLW0084	CONDENCER LENS	2	
13(5)		VXAW0066	S.P.D. ASS'Y	1	
14(5)		VMAW0236	COVER SET PLATE	1	
15(5)		VKGW0563	A.F. LENS COVER B	1	
16(5)			RELAY LENS ADJUSTMENT		
		VMAW0237	SCREW HOLDER	1	
17(5)		VKGW0564	A.F. COVER A	1	
18(5)		VMBW0067	F.O. BUTTON SPRING	1	
19(5)		VGTW0152	F.O. BUTTON	1	
20(5)		VXAW0042	FILTER HOLDER ASS'Y	1	
21(5)		VGTW0153	AWB SW BUTTON HOLDER	1	
22(5)		VGPW0296	S ADJUSTMENT HOLL PLATE	1	
23(5)		VGPW0297	F.O. SW PLATE	1	
24(5)		VGPW0298	A.F. SW PLATE	1	
25(5)		VMGW0068	P CUSHION RUBBER RING	2	
26(5)		VMGW0069	P CUSHION RUBBER RING	2	
27(5)		VMSW0052	RELAY LENS ADJUSTMENT	1	
			SCREW		
28(5)		VSCW0225	SHIELD PIECE E	1	
			PAN HEAD PRECISION SCREWS		
50(5)		XQN2+A2FN	M2X2	2	
51(5)		XQN2+AF4FXK	M2X4	2	
52(5)		XQN2+AF5FXK	M2X5	3	
53(5)		XQN2+AF7FXK	M2X7	1	
54(5)		XQN2+AF8FXK	M2X8	1	
55(5)		XQN2+C35FN	M2X3.5	2	
56(5)		XQN2+CF4FXK	M2X4	2	
57(5)		XQN17+AF2FXK	M1.7X2	1	
58(5)		XQN17+AF5FXK	M1.7X5	3	
59(5)		XQN17+C3FXK	M1.7X3	3	
60(5)		XQN17+CF35F	M1.7X3.5	1	
		XK			
61(5)		XQN17+CF4FXK	M1.7X4	4	
62(5)		XQN23+C145FN	M2.3X14.5	4	
			PRECISION MINI-SCREWS		
63(5)		XQS2+A4FXK	M2X4	2	
64(5)		XQS2+AF5FXK	M2X5	4	
65(5)		VHDW0042	P MOTOR FIXING SCREW	2	
66(5)		VHDW0043	*F MOTOR FIXING SCREW*	2	
67(5)		VHDW0044	P.C.B. FIXIG SCREW	1	
68(5)		VHDW0045	W POINT SCREW M3X4	1	
69(5)		VHDW0059	SCREW	1	

Auto Focus Section (x10)

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
		VEPW0361	AUTO FOCUS (A) C.B.A.	1	
		VEPW0509	AUTO FOCUS (B) C.B.A.	1	
IC5101		HH6952	HIC	1	
IC5102		AN78L05		1	
D5201		MZ303C	ZENER DIODE	1	
D5102		MA1062	ZENER DIODE	1	
D5103		OA99		1	
Q5201		2SB632	PNP SILICON	1	
Q5202		2SC2458	NPN SILICON	1	
R5201	-	RSHT330J	3W 33	1	
R5202		RSET9R1J	1W 9.1	1	
R5204		RDNT103J-K	CARBON 1/6W 10K	2	
R5205		RDNT103J-K	CARBON 1/6W 10K	2	
R5203		RDNT112J-K	1.1K	1	
R5108		RDNU114J-K	110K	1	
R5109		RDNU474J-K	470K	1	
R5105		RDNU102J-K	1K	1	
R5107		RDNT184J-K	180K	1	
		RYZT000N-K	0	6	
R5110		RNBC474J	CHIP 1/8W 470K	1	
		RNBC000J	0	1	
VR5101		VK05RH3-204	200KB	2	
VR5104		VK05RH3-204	200KB	2	
VR5102		VK05RH3-503	50KB	2	
VR5103		VK05RH3-503	50KB	2	
VR5105		VM04SHD-204	200KB	1	
C5201		CEX25C471QK	ELECTROLYTIC 25V 470	1	
C5101		CSD10D220MM3	TANTALUM 10V 22	1	
C5104		CSD06D220MM3	6V 22	1	
C5103		CCK50B102KY	CERAMIC 50V 1000P	1	
P5105		LV014FYEJ05A	2P	1	
P5206		LV016FMEJ02A		1	
P5104		LV021FMEJ14A		3	
P5201		LV021FMEJ14A		3	
P5202		LV021FMEJ14A		3	
P5203		LV045FMEJ08A		1	
P5106		LV017FVEJ09A	3P	1	
P5205		LV041FMEJ07A		1	
P5204		LV046FMEJ01A		1	
P5207		LV045FMEJ09A	14P	1	
		LV021FMEW02A	RELAY CONNECTOR	1	
		VEPW0366	FOCUS OUT SW C.B.A.	1	
		VEPC4501	W.B. SW C.B.A.	1	
		VEPC4502	A.F. SW C.B.A.	1	
		VEPC4503	FILTER SW C.B.A.	1	
		VEPC4504	AWB SW BUTTON C.B.A.	1	
		VVAW0026	IRIS MOTOR ASS'Y	1	
		VEKW0779	A.F. MOTOR ASS'Y	1	
		VSCW0137	SHIELD PIECE A	1	
		VSCW0136	SHIELD PIECE B	1	
		VMZW0147	INSULATION SHEET	1	
		VEKW0777	LED ASS'Y	1	
		VEKW0778	END SW ASS'Y	1	
		VEKW0957	ZOOM MOTOR ASS'Y	1	
		VEKW0977	LUG TERMINAL ASS'Y	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
1(6)		VKUW0051	HOOD CAP	1	
2(6)		VKUW0039	LENS HOOD	1	
3(6)		VMGW0092	FOCUS RING RUBBER	1	
4(6)		VKGW0766	DISTANCE INDICATOR RING	1	
5(6)		VXDW0021	LENS BARREL RING ASS'Y	1	
6(6)		VYKW0767	MANUAL ZOOM RING ASS'Y	1	
7(6)		VXDW0022	MASTER LENS ASS'Y	1	
8(6)		VMSW0073	MASTER LENS HOLDER	1	
9(6)		VMAW0299	INSTALLATION PLATE	1	
10(6)		VKGW0767	A.F. COVER B	1	
11(6)		VKGW0768	A.F. LENS COVER A	1	
12(6)		VFLW0084	CONDENCER OENS	2	
13(6)		VXAW0067	S.P.D. ASS'Y	1	
14(6)		VMAW0300	COVER SET PLATE	1	
15(6)		VKGW0769	A.F. LENS COVER B	1	
16(6)			RELAY LENS ADJUSTMENT		
		VMAW0237	SCREW HOLDER	1	
17(6)		VKGW0770	A.F. COVER A	1	
18(6)		VMBW0067	F.O. BUTTON SPRING	1	
19(6)		VGTW0152	F.O. BUTTON	1	
20(6)		VXAW0042	FILTER HOLDER ASS'Y	1	
21(6)		VGTW0153	AWB SW BUTTON HOLDER	1	
22(6)		VGPW0296	S ADJUSTMENT HOLL PLATE	1	
23(6)		VGPW0297	F.O. SW PLATE	1	
24(6)		VGPW0298	A.F. SW PLATE	1	
25(6)		VMGW0068	P CUSHION RUBBER RING	2	
26(6)		VMGW0069	P CUSHION RUBBER RING	2	
27(6)			RELAY LENS ADJUSTMENT		
		VMSW0052	SCREW	1	
28(6)		VSCW0225	SHIELD PIECE E	1	
			PAN HEAD PRECISION SCREWS		
50(6)		XQN2+A2FN	M2X2	2	
51(6)		XQN2+A3FXK	M2X3	1	
52(6)		XQN2+AF4FXK	M2X4	2	
53(6)		XQN2+AF5FXK	M2X5	3	
54(6)		XQN2+AF7FXK	M2X7	1	
55(6)		XQN2+AF8FXK	M2X8	1	
56(6)		XQN2+C35FN	M2X3.5	2	
57(6)		XQN2+CF4FXK	M2X4	2	
58(6)		XQN17+AF2FXK	M1.7X2	1	
59(6)		XQN17+AF4FXK	M1.7X4	3	
60(6)		XQN17+C3FXK	M1.7X3	3	
61(6)		XQN17+CF35F XK	M1.7X3.5	1	
62(6)		XQN17+CF4FXK	M1.7X4	4	
63(6)		XQN23+C145FN	M2.3X14.5	4	
			PRECISION MINI-SCREWS		
64(6)		XQS2+A4FXK	M2X4	2	
65(6)		XQS2+AF5FXK	M2X5	4	
66(6)		VHDW0060	P MOTOR FIXING SCREW	2	
67(6)		VHDW0043	F MOTOR FIXING SCREW	2	
68(6)		VHDW0045	W POINT SCREW M3X4	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
		VEPW0361	AUTO FOCUS (A) C.B.A.	1	1
		VEPW0510	AUTO FOCUS (B) C.B.A.	1	
IC5101		HH6952	HIC	1	
IC5102		AN78L05		1	
IC5201		NJM2903D		1	
D5201		DFH10C		1	
D5102		MA1062	ZENER DIODE	1	
D5103		OA99		1	
Q5201		2SA885	PNP SILICON	1	
Q5202		2SB790	PNP SILICON	1	
Q5203		2SC2458	NPN SILICON	1	
R5208		RSDT4R3J-K	1/2W 4.3	1	
R5201		RSET4R7J-K	1W 4.7	1	
R5105		RDNU102J-K	CARBON 1/6W 1K	1	
R5205		RDNT102J-K	1K	1	
R5211		RDNT103J-K	10K	2	
R5212		RDNU103J-K	10K	2	
R5210		RDNU104J-K	100K	1	
R5108		RDNU114J-K	110K	1	
R5107		RDNT184J-K	180K	1	
R5203		RDNT202J-K	2K	2	
R5207		RDNT202J-K	2K	2	
R5202		RDNU332J-K	3.3K	1	
R5206		RDNT333J-K	33K	1	
R5109		RDNU474J-K	470K	1	
R5209		RDNU621J-K	620	1	
R5204		RDNU823J-K	82K	1	
		RYZT000N-K	0	6	
R5110		RNBC474J	1/8W 470K	1	
		RNBC000J	0	1	
VR5101		VK05RH3-204	200KB	2	
VR5104		VK05RH3-204	200KB	3	
VR5102		VK05RH3-503	50KB	3	
VR5103		VK05RH3-503	50KB	3	
VR5201		VK05RH3-503	50KB	3	
VR5105		VM04SHD-204	200KB	1	
C5203		CEX10C470M	ELECTROLYTIC 10V 47	1	
C5201		CEX25C101M	25V 100	1	
C5101		CSD10D220MM3	TANTALUM 10V 22	1	
C5104		CSD06D220MM3	6V 22	1	
C5103		CCK50B102KY	CERAMIC 50V 1000P	2	
C5202		CCK50B102KY	CERAMIC 50V 1000P	2	
C5204		CCK50B103KY	50V 0.01	1	
L5201		LV041FM-EL01A	COIL 100uH	1	
P5105		LV014FYEJ05A	SHORT PLUG 2P	1	
P5206		LV016FMEJ02A		1	
P5104		LV021FMEJ14A		3	
P5201		LV021FMEJ14A		3	
P5202		LV021FMEJ14A		3	
P5203		LV045FMEJ08A		1	
P5106		LV017FVEJ09A	3P	1	
P5205		LV041FMEJ07A		1	
P5204		LV041FMEJ08A	4P	1	
P5207		LV045FMEJ09A	14P	1	
		LV021FMEW02A	RELAY CONNECTOR	1	
		VEPW0366	FOCUS OUT SW C.B.A.	1	
		VEPC4501	W.B.SW C.B.A.	1	
		VEPC4502	A.F.SW C.B.A.	1	
		VEPC4503	FILTER SW C.B.A.	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
		VEPC4504	AWB SW BUTTON C.B.A.	1	
		VVAW0026	IRIS MOTOR ASS'Y	1	
		VEKW0958	A.F. MOTOR ASS'Y	1	
		VSCW0137	SHIELD PIECE A	1	
		VSCW0136	SHIELD PIECE B	1	
		VSCW0223	SHIELD PIECE C	1	
		VSCW0224	SHIELD PIECE D	1	
		VEKW0777	LED ASS'Y	1	
		VEKW0778	END SW ASS'Y	1	
		VEKW0957	ZOOM MOTOR ASS'Y	1	
		VEKW0975	LUG TERMINAL ASS'Y	1	